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A DESCRIPTIVE ANALYSIS OF VOCATIONAL, PRE-VOCATIONAL AND INDUSTRIAL ARTS PROGRAMS IN TREATMENT CENTRES AND SPECIAL SCHOOLS FOR THE PHYSICALLY HANDICAPPED IN CANADA

by

© Jacob De Leeuw

A THESIS

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OF MASTER OF EDUCATION

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled A DESCRIPTIVE ANALYSIS OF VOCATIONAL, PRE-VOCATIONAL AND INDUSTRIAL ARTS PROGRAMS IN TREATMENT CENTRES AND SPECIAL SCHOOLS FOR THE PHYSICALLY HANDICAPPED IN CANADA, submitted by Jacob De Leeuw, in partial fulfillment of the requirements for the degree of Master of Education.

Supervisor

Albert Meyers

Date April 26, 1982

DEDICATION

This work is dedicated to my father and mother, who sacrificed to achieve a dream, making my pursuit of an academic career a reality.

ABSTRACT

The major purpose of this study was to provide an analysis and description of vocational, pre-vocational and industrial arts programs provided for multiple physically handicapped students in school hospitals and special schools in Canada in 1981. The population for this study included 36 identified school hospitals or special schools that offered a program for exceptional children, including physically handicapped children. From this population a stratified sample of 13 schools was taken that included only those schools where the majority of students were multiple physically handicapped.

Research instruments were distributed to the principals of these 13 schools. The research instrument was a questionnaire containing 36 questions which were divided into six categories for ease of referencing. These were: school background information, industrial education, instructor background information, special education, program objectives, equipment and curriculum.

The research data revealed that 11/13 schools provided an academic oriented program, the first of which was offered in a school hospital in Canada in 1898. Pre-vocational coursework was offered in 3/13 participating schools. Most schools were governed and funded adequately by the provincial government.

All participants in the study were well qualified with certification beyond a first degree. Not all respondents indicated that they had taken special education courses and this was reflected in the fact that no concensus existed across Canada regarding the taking of special education courses to teach multiple physically handicapped students.

The three main disabilities of children who were students at the participating schools were cerebral palsy, developmental delays, and muscular dystrophy with non-reader, sensory handicaps and emotional disorders as the three predominant secondary disabilities. Respondents agreed that personal and social development were the two principal objectives of the educational program for these learners.

Response to the inclusion of industrial education courses into curriculum for multiply physically handicapped learners was positive but hindered by poor transportation, accessibility or acceptance. All teachers spent more time teaching the practical aspects of their course than teaching theory.

Furthermore, responses indicated the existence of good communication patterns as educators functioned in these multi-discipline settings. It was also shown that school hospital environments allowed for flexible and innovative educational programming to respond to changing hospital populations due to integration and normalization.

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CHAPTER I

INTRODUCTION

Historically, handicapped children did not do very well as far as an education was concerned. In Sparta and Athens, for instance, handicapped children were abandoned and subjected to exposure since the roving tribe saw them as a hindrance to purifying the race. The handicapped included the mentally retarded, the physically handicapped whether by birth or accident, the sick and others (Pritchard, 1963, p. 2). These individuals were looked upon by society with disdain, as a liability and as second class citizens. Through the centuries the physically handicapped were viewed from various perspectives but it was not until after the Second World War that significant changes were brought about in their treatment and education.

Karagianis and Nesbit (1979) in their book Perhaps I'll Be In Your Class: Approaching Integration suggest that Western civilization

> is in the process of moving from a traditional custodial model to a rehabilitative-educational model when viewing the exceptional child. Indigenous to this model is the belief that handicapping conditions, including mental handicaps. must not be viewed as reason to deny the individual the right to participate in society and maximize his potential. A major part of this process is appropriate education, the functional prerequisite. (p. ix)

The first schools for the blind and the deaf appeared before the end of the eighteenth century but schooling for the physically handicapped did not become a reality until much later. Although there were individual and isolated attempts to improve the lot of the physically handicapped, the prevailing attitude at that time was still one of "out of sight, out of mind".

Physical disabilities were often taken as a sign of divine displeasure, a form of punishment handed down from above to the parents of the disabled child. Hence the child often became the object of dislike and harsh treatment (Pritchard, 1963, p. 8).

An isolated and unsuccessful attempt was made to educate physically handicapped children in an ordinary school in England in 1884. This failure caused almost all severely physically handicapped children to be exempted from school on a permanent basis. Nine years later the London Board of Education commissioned a report on the needs of the physically handicapped and special education followed shortly thereafter. It is understandable that education for the physically disabled should lag behind since educational and social trends are followed, not created, by provision for the handicapped. It is also true that specialist techniques associated with sciences, medicine and mental measurement impinge upon this area and these themselves are recent (Pritchard, p. 112).

In the United States, like England, the establishment of special schools for the physically handicapped was very slow. The first school for the physically handicapped in America was established in Chicago in 1899. This school was quickly followed by others but the heavy expense associated with these schools was a major factor that retarded the expansion of the exceptional program. However, interest in exceptionality continued to grow and in 1922 at Columbia University the Council for Exceptional Children (C.E.C.) was formed. Special education was further given a boost when in 1930 the White House gave its endorsement to the cause of educating handicapped children (Brolin & Kokaska, 1979, p. 7).

By 1947, public apathy towards the handicapped was changing due to the fact that many war veterans returned home with handicapping conditions and had to be retrained for purposes of living useful lives. This also promoted the education and expansion of programs for children who suffered from physical disabilities (Cruickshank, 1971, p. ix). Since then there has been a constant gradual growth of services for the handicapped, including the physically handicapped, in the western world. Monies have become available to expand programs for conducting research and other areas related to physical disabilities and educating individuals with disabling conditions.

Canada, more or less, followed the developments in providing educational opportunities for the physically handicapped that were taking place in the United States. This replicative pattern for Canada resulted in an increased emphasis on education for exceptional children during the last thirty years. As far as physically handicapped children were concerned, many of the recent advances have been due to the work of voluntary bodies (Pritchard, 1963, p. 219)

NEED FOR THE STUDY

It has been suggested that .5% of Canada's population are exceptional children who are physically handicapped. This can be concluded from statistics quoted by various authors such as Cruickshank (1971), Bleck and Nagel (1975), and Kirk (1972). The Royal Bank Letter (1981) presents these statistics in another way:

> The figures are staggering. More than 500 million people around the world are either physically or mentally handicapped or both - nearly every ninth living human being. The ratio in Canada is about one in ten, despite the fact that starvation and disease rarely cause preventable handicaps here as they do in poorer countries. (p. 1)

The Glenrose School Hospital in Edmonton was built by the Government of Alberta in response to the needs of school-age children who were physically handicapped by birth or accident. The needs of cerebral palsy children were taken care of at the Cerebral Palsy Clinic, a treatment centre resulting from the concerns of parents who had children with cerebral palsy. Funding was shared by parent associations, commercial organizations and the government.

However, children with other physical disabilities such as muscular dystrophy or head injuries resulting from accidents had no recourse to special facilities for medical attention or educational programming. Thus the totally government sponsored multi-discipline setting of the School Hospital came to deliver a needed service in the habilitation and rehabilitation of all physically handicapped children.

The Glenrose School Hospital is funded by the provincial government while educational services are provided by the Edmonton Public School Board, under contract with the provincial government. In its philosophy toward special education the Edmonton Public School Board takes the position that:

> Special Education services provide individualized educational experiences designed not only to alleviate the difficulties encountered by exceptional students, but also to provide the most suitable learning environment for each student. An individual student may require specialized services on a limited or continuing basis, depending on the extent and nature of the student's needs. The mildly handicapped student is best served in a regular program with whatever modifications are required. The extent of intervention increases with the severity of the handicap. (not dated, p. 1)

There will always be the moderately and severely physically handicapped who, because of medical treatment needs, will need to receive their education at a special school or school hospital. Such is the case at the Glenrose School Hospital where a full educational program, including optional courses, is available to the students. Industrial education, which is offered as industrial arts at the junior high level, grades 7, 8, and 9, and as industrial education at the senior high school level, grades 10, 11, 12 is one of these options. The latter courses are elective while the former courses are mandatory for the student.

The task is to make available to physically disabled children the full range of educational opportunities as these exist for the non-handicapped. Only in this way will they receive the appropriate education to which they are legally entitled (Dahl et al, 1978, p. 6).

However, it would appear that from a survey of the literature as well as a search of the Educational Resources Information Center Data Base, that information describing educational opportunities for physically handicapped students in Canada does not exist. As a consequence it is difficult or almost impossible to establish the availability of total educational programs for physically handicapped learners. Because of this lack of available information a need was established for this research.

THE PROBLEM

The purpose of the study was to provide a descriptive analysis of vocational, pre-vocational and industrial arts programs in treatment centres and special schools for multiple physically disabled learners across Canada, and where these individuals acquired their basic education that will permit them to become productive members of the complex technological world they will enter upon leaving school.

The following five specific objectives helped to establish the scope of this study.

1. To determine the types of instructional programs that are available to physically handicapped students in the schools that are part of this study.

2. To determine the agencies which provide funds for the schools for physically handicapped across Canada.

3. To identify the industrial education courses that are part of the students' educational programs in participating schools.

4. To determine the kinds of educational preparation that teachers of the physically handicapped have and who are engaged in teaching industrial education.

5. To identify the kinds of equipment modifications that were made to machine tools that would permit physically handicapped students to operate these tools.

POPULATION OF THE STUDY

The population of this study included both treatment centres and special schools operating across Canada in 1981 that provided an educational program specifically for physically handicapped children.

How this population was identified is fully described in another section of this chapter labelled "Methodology".

OPERATIONAL DEFINITIONS

The following operational definitions have been selected as being appropriate to this study and therefore apply only to this study.

Since this study involved an educational model within a medical setting many terms are used interchangeably by both medical practitioners and other professionals in this setting. For instance, many persons use physical handicap and physical disability as synonyms and yet these two words have different meanings. In this section the researcher will first distinguish between impairment, disability, and handicap.

Impairment

Stevens (1962) in his book Taxonomy in Special Education for Children with Body Disorders suggests that the physical defect itself should be called the impairment. It is the actual condition of the tissue, such as an absence of fingers or diabetes.

Vandergoot and Worrall (1979) in their book Placement in Rehabilitation suggest that lack of precision in placement and communication "partially stems from inconsistency in the usage of terms" (p. 3). As a result they make the following suggested definition for impairment:

> The concept of impairment indicates a physiological, anatomical, or mental loss or other abnormality, or both . . . . Examples of such impairments can be found in abnormalities and residual losses remaining after the active stage of pathology has been arrested or eliminated in nonpathological congenital deformities, and in conditions resulting from the disuse of muscle or organs for extended periods of time. (p. 4)

Physically disabled

Meyerson (1971) states that disability:

> is not an objective thing in a person, but a social value judgement. A society makes a disability by creating a culture in which certain tools are required for behavior. Variations in physique by themselves have little psychological meaning outside of reference in which they are evaluated. (p. 9)

Further to this Stevens (1962) suggests that disability is "a matter of function. It is literally a lack of some ability. It is a limitation of the behavior directly dependent upon the impairment" (p. 11).

From a medical perspective Banus (1971) in her book The Developmental Therapist defines physical disability as:

> a handicapping condition which does not necessarily affect the health of an individual. (p. 449)

Physically handicapped

Newland (1971) uses the term "physically handicapped" to denote:

> a group of exceptionalities - the orthopedic, the sensorily handicapped, the physically delicate, the brain-injured, the epileptic, and the like. The brain injured will include the cerebral palsied and those who have, or are believed to have, higher level neural impairment not reflected in motor dysfunction. (p. 116)

Reynolds et al. (1977) in their Council for Exceptional Children publication Teaching Exceptional Children in All America's Schools see a handicap "as something which is measured by the extent to which an impairment, a disability, or both gets in the way of normal living, including acquiring an education". "A handicap is highly personal." The central concept of handicap is that "it consists of the individual's own interpretation of the impairment and the individual's ability to live with that interpretation" (p. 415).

The Encyclopedia and Dictionary of Medicine, Nursing and Allied Health (1978) gives the following definition for handicap:

> any physical or mental defect or characteristic that prevents a person from taking part freely in the activities appropriate for his age. A handicap may be the result of an accident or a disease, or it may be congenital. (p. 439)

Most people, including the disabled, do not usually differentiate between "disability" and "handicap". In fact, many persons who do distinguish between these terms use these terms as well as others, such as affliction and impairment, interchangeably in their conversations or writings.

The Canadian Organizing Committee (C.O.C.) in an article entitled "What is an handicapped person?" discussed a number of relevant terms by quoting from the United Nations Declaration of the Rights of Disabled Persons by writing:

> the term "Disabled Person" means any person unable to ensure himself or herself, wholly or partly, the necessities of a normal individual and social life or both, as a result of deficiency, either congenital or not, in his or her physical or mental capabilities. A handicap is the disadvantage that is consequent upon impairment and disability. It represents the social and environmental consequences to the individual stemming from the presence of a disability. (Action, 1(13), 1981, p. 7)

In special education, children are not referred to as "disabled" but as "handicapped". Government programs and legislation, as well as popular literature, rely on the term "handicapped" (Dunham, 1977, p. 12).

Dunham's discussion is the basis for accepting the term "handicapped" for this thesis.

Multiple handicapped

Canada Health and Welfare (1980) says that labels identifying subgroups of the physically handicapped population are highly arbitrarily defined. Nevertheless, labels are useful and this agency identified the multiply handicapped as:

> those handicapped persons who are usually very severely disadvantaged in their communications by comparison to all other persons, including those who have only a single, though severe, physical handicap. (p. 85)

Karagianis et al. (1979) defines the multiply handicapped in the following manner:

> A combination of impairments other than deaf-blind, that causes such severe problems that the child cannot be accommodated in a special education program for any one of the impairments. (p. 62)

The definition given by Karagianis and his colleagues was the definition for the term multiple handicapped that was accepted for this study and will be used throughout the report.

Multi-discipline setting

The Glenrose School Hospital is a multi-discipline setting where teachers are in frequent contact with psychologists, therapists and personnel from various other disciplines. The World Health Organization first introduced the "multi-discipline" concept in 1967 and defined it as:

> Diagnosis, assessment, treatment and care must be concerned not only with the disability, but with the whole child in his total environment. The organization of services must be such that all parts are linked together, that information passes freely from one to another and that the workers at all levels of specialization function and see each other as equal partners in a combined task. (Briggs, 1969, p. 1)

Haslam and Valletutti (1975) in their book Medical Problems in the Classroom give the following definition for multi-disciplinary:

> pertaining to the cooperative participation by several professional groups. (p. 324)

Because there are several professional groups as well as paraprofessional groups who work with students at the Glenrose School Hospital the definition for multi-disciplinary given by Haslam and Valletutti will be used in this report.

Exceptional children

Although various authors have given definitions to establish who the exceptional child is, Dunn's (1963) definition seems to be the most complete. He states that exceptional children are those:

> who differ from the average to such a degree in physical or psychological characteristics that school programmes designed for the majority of children do not afford them opportunity for all-round adjustment and optimum progress, and who there-

> fore need either special instruction or in some cases special auxiliary services, or both, to achieve at a level commensurate with their respective ability. (p. 11)

Dunn's definition for exceptional children was the one that was accepted for this study.

Special education

Practically all countries who have established universal and compulsory education have found that general programs for the ordinary child are not suitable for the exceptional child (Kirk, 1972, p. 7).

The Thesaurus of ERIC Descriptions (1980) defines special education as:

> Educational programs and services for handicapped and gifted children who have intellectually, physically, emotionally, or socially different characteristics from those who can be taught through normal methods of materials. (p. 220)

From the Canadian government perspective, special education is seen as dealing with problems which were identified at an early age so that:

> a child can profit from remediation and special services as quickly as possible and, that an exceptional child be allowed to profit from a schooling beyond the school-leaving age. (Health and Welfare, 1980, p. 78)

The Edmonton Public School Board, in an undated handbook, says that special education "consists of educational programs and/or services designed to meet the needs of exceptional students" (p. 1).

A unique interpretation of special education is given by the Government of the United States in Public Law 94 - 142 Education for All Handicapped Children Act (1975) which states that special education is:

> specifically designed instruction, at no cost to the parents or guardians, to meet the unique needs of a handicapped child including classroom instruction, instruction in physical education, home instruction, and instruction in hospitals and institutions. (p. 3)

Integration

The term integration is subject to a wide range of definitions and interpretations. For the purpose of this study, however, the definition given by Kirk (1972) was found to be acceptable. In education, he says, integration denotes:

> a trend toward educating the exceptional child with his normal peers to whatever extent is compatible with his fullest potential development. (p. 6)

Industrial education

According to Alberta Education (1978) Industrial Education is defined as:

> a program consisting of courses which provide a continuum of experiences, starting with exploratory activities in junior high school and expanding in the high school to the development of skills related to career fields. (p. 83)

Although Silvius and Curry (1956) and other authors refer to industrial education as a generic term their definitions for this term include industrial arts, pre-vocational education and vocational education. These are aspects of the continuum that falls under the term of industrial education.

Industrial arts

Various definitions for the term industrial arts can be found in the literature. The evolution of industrial arts definitions closely parallels the changing philosophy which caused manual arts to become industrial arts. One of the most quoted definitions for industrial arts is by Bonser and Mossman, (1923) who said that:

> The industrial arts are those occupations by which changes are made in the forms of material to increase their values for human usage. As a subject for education purposes, industrial arts is a study of the changes made by man in the forms of

> materials to increase their values, and of the problems of life related to these changes. (p. 5)

A number of years later the Western Arts Association (1933) suggested a definition for industrial arts which emphasized awareness and appreciation factors. This organization defined industrial arts as:

> a form of general or non-vocational education, which provides learners with experience, understandings, and appreciations of materials, tools, processes, products. (p. 29)

Thirty years later definers of this term placed the same emphasis as the previous two definitions did on tools, materials and processes, with the exception that these authors added an occupational perspective to their definition for industrial arts. Feirer and Lindbeck (1969) defined industrial arts as:

> the broad study of tools, materials, equipment, processes, products, and occupations of industry, pursued for general education purposes in the shops and laboratories of schools. (p. 15)

Moon as editor of the 24th Yearbook of the American Council of Industrial Arts Teacher Educators A Guide to the Planning of Industrial Arts Facilities (1975) suggests that because a "technological culture has been created with the development of practical applications, science principles, techniques of production, and ecological awareness" (p. 15), the definition for industrial arts should read in this way:

> Industrial arts is that part of the educational program which concerns itself largely with preparing individuals to live in a technological culture. This is traditionally achieved through a study of industry by providing first-hand manufacturing and service-type experiences in the use of tools, materials, and processes. (p. 15)

The definition by Moon was found acceptable for this study.

Multiple activity program

The multiple activity program is:

> an organizational device by means of which a variety of exploratory experiences can be presented with a minimum of room and equipment. (Alberta Education, 1978, p. 115)

The uniqueness of the program lies in the design of the laboratory which allows for two, three or four activities to be in progress concurrently.

Harder (1968) says that the multiple activity program "is built on the rationale that the modern, technological, "space-oriented" person, to be educated; must be informed of and understand the concepts inherent in a productive society" (p. 53). He further suggests that:

> The program is implemented in a laboratory that has a planned work area or "bay" for each of the units (such as woods, plastics and graphic arts). Each area is large enough to accommodate from four to five students with the machines, tools, and materials needed. This is known as "multiple-activity" organization for learning. (p. 54)

Vocational education

A definition is given by Silvius and Curry (1956) in their book Teaching Multiple Activities in Industrial Education. It states that "vocational education is an educational program organized to prepare the learner for entrance into a chosen vocation" (p. 8). Taking the dynamics of society into consideration, Thompson (1973) defines vocational education as:

> any education that provides experience, visual stimuli, affective awareness, cognitive information, or psychomotor skills; and that enhances the vocational development processes of exploring, establishing and maintaining oneself in the world of work. (p. 216)

Another point of view on vocational education is expressed by Evans and Herr (1978) who suggest that the "most inclusive view of vocational education content sees it as that content necessary for occupational success" (p. 48) and this, by definition, includes general education. However, no definition of vocational education will satisfy all educators thus Evans et al. suggest that "vocational education includes all education which makes a person more competent in one group of occupations than in another" (p. 48). Although this definition is specific, course content ought not to be entirely specialized since essential aspects of general education pertaining to occupational success should be included.

Pre-vocational education

Pre-vocational education is one of the programs in special education. It does not receive much attention in the literature but an Edmonton Public School Board publication does suggest what the program attempts to do at both junior high and senior high levels, namely:

> pre-vocational programs are for those students who have trouble coping with the regular program. The program consists of a blending of academic, exploratory, and vocationally oriented courses with emphasis on remediation, practical applications, and vocational skills. (Edmonton Public School Board, undated, p. 1)

Although the following definition deals with prevocational training it is quoted here because the purpose and methodology are clearly stated. Since prevocational training is not unlike prevocational education the definition supports the above, namely by stating that:

> The purpose of prevocational (training) is to identify adjustment problems and to reduce these difficulties through specific and individualized attention to each area. The services focus on activities of daily living necessary for good personal and vocational work adjustment. (Payne et al., 1974, p. 265)

INSTRUMENTATION

A review was made of a number of references that were written on the topic of instrument design. From this review it was decided by the researcher that a questionnaire would be the instrument used to collect data for analysis. A questionnaire was selected as the data collecting instrument because of the number of advantages this instrument has over other instruments used for research purposes. The advantages of a questionnaire are: it can be easily reproduced; it can be easily mailed to members that comprise the research population; data collected with this type of instrument is objective and free of participant bias; and the data collected with a questionnaire can be readily analyzed. Authorities who have written on instrument design list a number of disadvantages that are inherent in a questionnaire as a data collecting instrument. Among these disadvantages are: that statements on the questionnaire are subject to misinterpretation by participants; the amount of time needed by participants to complete the instrument; and the possibility of a low rate of return.

The research instrument was prepared in consultation with the major advisor for the study. The purpose of this consultation was to provide the researcher with guidance and direction in the procedures to be followed to prepare a research instrument that is objective and free of researcher bias. Other purposes of this consultation were: to ensure that questions were as unambiguous as possible, that questions were correctly sequenced and that questions were designed that had both face and content validity.

Design of the Questionnaire

The research questionnaire that was designed for this study was modelled after the research instrument that was used by Dunne (1976) in his research. Dunne in completing the requirements for a master's degree conducted a nationwide study in Canada on the prevocational, vocational and industrial arts programs offered in residential schools for the hearing impaired student in Canada. From a synthesis on the research instrument designed by Dunne as well as information collected from the references reviewed on instrument design a preliminary draft of the questions that would comprise the research questionnaire was prepared.

The preliminary draft of the questionnaire was given to the major advisor of the study for review, comment, and criticism. From this review a number of significant comments and criticisms were made on the structure and scope of the questions of the instrument. These comments and criticisms were reviewed by the researcher and those that were considered valid were considered in the second draft of the instrument.

The second draft of the instrument was reviewed by two educators at the Glenrose School Hospital. The principal and vice-principal were requested to take part in this aspect of the research because of their knowledge of the industrial education program, their experience of working with physically handicapped children and the fact that they were readily available to the researcher. Following their review of the instrument a number of recommendations were made:

1. that some minor changes be introduced in the covering letter with regards to wording and format,
2. that a summary sheet describing the industrial education program at the Glenrose School Hospital be attached to the covering letter for information,

3. that a question on "time spent by students in industrial education" be included as part of the instrument,
4. that additional space for comments be provided as well as a note of thanks on the instrument,
5. that curriculum guides on industrial education be obtained from the provincial Departments of Education.

The revised second draft of the questionnaire was placed into the hands of the major advisor for further comments and review. His suggestions were primarily directed at finishing touches such as:

1. centering of subheadings,
2. placing the score boxes in a manner so that the scoring could be done more easily,
3. numbering of questions.

These changes were incorporated into the design of the questionnaire.

The research instrument which included the questionnaire, the Sheet of Definitions that were applicable to the study, and the Information Sheet on the Industrial Education Program at the Glenrose School Hospital were then placed into the hands of a specialist in instrument design of the Department of Educational Psychology, the University of Alberta, for critical review and analysis.

This authority reviewed the questionnaire question by question and recommended that a number of modifications be made to increase the content validity of the instrument. These recommendations were: to use the correct words to secure the type of information that was needed; to consider the numerical ordering of some of the questions; and for the researcher to review the statements that were identified so that the intent of the question left no doubt in the mind of the participant what the intent of the question was.

This reviewer also suggested that in analyzing that data collected could be used to present these data from a national rather than a provincial perspective.

It was also the opinion of this reviewer that the decision of the researcher to include the two information sheets with the instrument was a wise decision and one that would serve a worthwhile function.

Following this review the necessary additions and modifications that the reviewer recommended were made to the final draft of the research questionnaire before it was used in the pilot study. The pilot study and its purposes are described in detail in the following section.

PILOT STUDY

The pilot study was conducted to pretest the research questionnaire before it was used in the major segment of the research. The pilot study had the following purposes: to determine the face validity of the questions on the research instrument; to determine if statements on the research questionnaire had content validity; to determine if questions were properly sequenced; to determine the amount of time required to complete the questionnaire.

Pilot Study Population

The pilot study population consisted of five teachers who taught at the Glenrose School Hospital. Four of these teachers were academic teachers and the other was a subject specialist. Three of these teachers taught at the junior/senior high school level and the remaining two teachers taught at the elementary school level. All pilot study participants were chosen to be part of this phase of the research because of their familiarity with the industrial education program that is taught at the School Hospital and because they were readily available to the researcher. Pilot study participants were not included as members of the research population.

To conduct the pilot study, questionnaires with a covering letter that served as an introduction to the research, were distributed to each participating teacher. In addition each teacher involved in this phase of the study also received the information sheets on "Definitions" and the "Description of the Glenrose School Hospital Industrial Education Program".

The participating teachers were requested to complete the research instrument as thoroughly as possible and to record the maximum amount of time that was needed to complete it.

Results of the Pilot Study

Data generated from this stage of the research indicated that the mean time required by the pilot study participants to complete the instrument was 37 minutes.

After each participant completed the instrument each was asked to provide the researcher with comments and recommendations on the format and structure of the questionnaire. The following observations toward the questionnaire were made by those involved in the pilot study:

1. the order and structure of the questions presented no ambiguity,
2. it was considered advantageous to have many questions which allowed for brief descriptions, rather than a "Yes-No" answer,
3. some of the questions were subject - specific and could not be answered by the participants,
4. the amount of time needed to complete the instrument did not present any problem to the participants.

These results were discussed with the thesis supervisor who agreed that the instrument should be used in the major phase of the research. A copy of the research instrument, in its final form, can be found in Appendix B, page 258.

METHODOLOGY

The following methodology was used to bring this study to its conclusion. To gather pertinent information, the Data Base of the Educational Resources Information Centre (ERIC) was used to run an INTERACTIVE ERIC computer search, a program developed and run on the University of Alberta computer system. Both the Research in Education (RIE) and the Current Index of Journals in Education (CIJE) as well as the ERIC data bases were searched using the following descriptors:

Industrial Education
Special Education
Industrial Arts
Vocational Education
Pre-vocational Education
Handicappped Students
Physical Disabilities
Hospitalized Children
Physical Handicaps
Orthopedically Handicapped
Rehabilitation
Residential Schools

A search was made of the literature related to this study that was housed in both the education and medical libraries of the University of Alberta as well as the medical library at the Glenrose Hospital, the Edmonton Public Library, the Legislature Library and the Provincial Archives of Alberta Library. The results of this search showed that little research had been completed to identify educational facilities for the multiple physically handicapped child in Canada. The results from the search of the three data bases and the literature search help to identify and establish a need for this study.

The following procedure was used to identify those individuals who would become the research population.

A review was made of a study completed by Briggs (1980) entitled Treatment Centres For Physically Handicapped Children - A Comparative Survey - 1980. From this review the researcher was able to identify the names and addresses of nine treatment centres as well as a contact person for each centre.

To secure the names and addresses of additional treatment centres a letter was prepared and mailed to Dr. S. Inrig, co-editor of Special Education in Canada. This publication is published by the Canadian Committee of the Council for Exceptional Children and addresses itself to Canadian issues in Special Education and features as well articles by Canadian writers.

A copy of the correspondence with Dr. Inrig can be found in Appendix A, page 243. In her return letter to the researcher Dr. Inrig stated that a list of school hospitals, special schools, and residential schools for the physically handicapped did not exist at the time of the study.

Personnel of Alberta Education who are responsible for Special Education were contacted by the researcher to ask their assistance in identifying schools for the physically handicapped in Canada. The result of this contact was that the researcher was given a copy of The Canadian Education Association Handbook - 1981. In this publication the names and addresses of provincial government officials who are responsible for the various provincial educational programs are listed. This listing helped to identify the population of the study.

Identifying the Research Population

In order to generate a list of educational facilities for the physically handicapped across Canada a letter was prepared and presented to the major advisor of the study for review, comment and approval. Upon approval the letter was mailed to each special education director in both the provinces and territories of the nation. The purpose of this letter was to request the directors to assist the researcher in identifying educational facilities used with physically handicapped children in their home provinces. With the exception of Quebec, the remaining letters were written in English. The letter that was sent to the director in Quebec was written in French, which was a direct translation of the English letter.

To translate the English letter the researcher had the assistance of the teacher-librarian from the Glenrose School Hospital. Prior to becoming a member of the staff of the School Hospital this teacher had taught in France and is fluent in the French language. To check the accuracy of this translation the researcher had the letter back-translated into English. The back-translation was done by a teacher of French at a large suburban high school near the City of Edmonton. When the letter was back-translated it was found to be accurate in content as well as in detail. Copies of both the English letter and the French letter can be found in Appendix A, pages 244 and 245.

A total of 10 letters were mailed. Nine of these letters were sent to the special education directors in each of the provinces, and the one remaining letter was sent to the special education director of the Northwest Territories. Each of the 10 directors responded to this letter for a 100% rate of return. The majority of the letters that were received contained the data that was requested with the exception of the letter from directors from New Brunswick and Nova Scotia. Both of these directors suggested in their letters that the researcher contact an identified third party. To follow through on this suggestion the researcher prepared another letter and mailed it to these individuals. Appendix A, page 246, contains a copy of this letter.

The Director of Special Education for the province of Quebec attached to the letter of reply a sheet which listed 14 special education schools in that province. This list included not only the address of the schools but included the name of the senior administrator for each school. Not identified on this list was the type of educational program that was offered at each of these schools. To determine what kind of educational program was offered in these schools the researcher decided to compose a one-page questionnaire and a covering letter. These instruments were reviewed by the thesis advisor. The letter was prepared following the procedures used to prepare the letter that was sent to the Director of Special Education in Quebec. That is, the letter was first written in English, then translated into French, and then back-translated into English. The translators were the two individuals who were involved in the translation/back-translation of the letter that was sent to the provincial directors. This letter was sent to only 13 schools on the Quebec list because one of the 14 schools was identified as a "School for the Deaf". A copy of this letter and question sheet can be found in Appendix A, pages 247 and 249.

Of the 13 special education schools identified by the Director of Special Education in Quebec, 8/13 questionnaires were returned for a 62% response from that province.

At this point the researcher decided to send the 6 delinquent respondents a follow-up letter and questionnaire. The purpose of mailing a follow-up letter and questionnaire to these respondents was to increase the rate of return so that an accurate report could be prepared. This follow-up letter was written in English and was reviewed by the thesis advisor before it was translated/back-translated by the same persons who did the first translation. The questionnaire that was mailed was identical to the one used in the first mailing. The letter, questionnaire and self-addressed envelope were mailed and this procedure yielded an additional 2/6 instruments for a return of 77% or 10/13.

Similar to the reply that was received from Quebec the Director of Special Education from Ontario appended to his reply a list of 14 names and addresses of treatment centres and special schools in Ontario which offer a special education program for physically handicapped children. Only ten of the Centres were contacted because Briggs (1980) in his research identified that four of these Centres provided for the educational needs of physically handicapped learners.

It was found that these ten centres, although serving learners who were physically handicapped, primarily served learners who were of kindergarten through elementary school age. The researcher was also informed that none of these schools offered an industrial arts program to their students. This information was provided by Mr. M. Izzard, Director of the Crippled Children's Centre in Toronto.

Mr. Izzard further pointed out that since Bill 82 had been legislated in Ontario, physically handicapped children of junior and senior high school age had equal right to an education and as a consequence of this Bill were integrated into the normal schools of the province where they have access to industrial arts. Mr. Izzard stated "that if the child is too severely physically handicapped he will not have access to industrial arts".

Because these ten Centres did not meet the criteria established for this study they were removed from the research population.

To secure additional information on provincial legislation in Ontario directed at the education provided to the physically handicapped child a letter was written to Mr. M. Wall, Director of the Niagara Peninsula Crippled Children's Centre located at St. Catherines. A copy of this letter can be found in Appendix A, page 252.

Research Instrument

From an extensive review of similar research investigations and from reference books written on instrument design the decision was made that the appropriate instrument for this study would be a questionnaire. The procedures that were used by the researcher in designing that instrument for use in this study are described in detail in a previous section of this chapter.

Collecting Research Data

To collect data for analysis a covering letter that would accompany the research questionnaire was prepared. This letter had a number of related research purposes which were: to inform the participant about his/her role in the research; to describe the purpose of the research;

and to ask each participant to cooperate in the study by completing the questionnaire and returning it in the self-addressed envelope by the established deadline date given in the letter.

A second letter was prepared. This letter was addressed to principals and directors whose names appeared on the list of schools, for physically handicapped learners, that was received from provincial directors of special education. The purpose of this letter was to ask the administrators of these schools to cooperate in the research by permitting their teachers to become involved in the study. A related secondary purpose of this letter was to have these administrators route the covering letter and the accompanying questionnaire(s) to the industrial arts or vocational education teacher(s) on the staff of that particular school. A copy of these letters can be found in Appendix B, page 254.

Included with the letter addressed to principals and directors that was sent to each school were 3 sets of: the covering letter, a copy of the research instrument, self-addressed envelope, and two information sheets. One information sheet gave a list of definitions for the various terms that were an integral part of the questionnaire. This procedure was used so that the participants could develop an understanding of the terms that the researcher was using. The second information sheet that was included described the industrial education program that is offered at the Glenrose School Hospital. These two information sheets along with the covering letter and the research questionnaire are part of Appendix B, page 253. A total of 14 schools were contacted by mail and 8/14 schools responded for a 57% return.

For the participants who did not meet the established deadline date a follow-up letter was prepared. The letter that was written was checked, corrected and approved by the major thesis advisor. Those participants who were delinquent in meeting the deadline date received in addition to the follow-up letter, a copy of the research questionnaire, the two information sheets, and a self-addressed envelope for the return of the completed questionnaires. Using this procedure yielded an additional 4/6 responses for a return of 86% or 12/14.

ORGANIZATION OF THE THESIS

Chapter II contains a review of the literature and research related to the study. Three main purposes for reviewing the literature and research related to this study are: to provide an overview of present educational practices with the physically handicapped; to review research related to this study; and to review publications, research, and educational practices as these are found in Alberta that relate to the physically handicapped.

Chapter III and IV describe the data collected from the questionnaires which were sent to the various educational institutions across Canada. The information will be further summarized and tabulated to provide a description of industrial arts, pre-vocational and vocational education as these relate to the physically handicapped.

Chapter V of this study contains a summary of the research methodology, observations and conclusions drawn from the findings of the study, and recommendations for further research.

CHAPTER II

REVIEW OF THE LITERATURE AND RELATED RESEARCH

INTRODUCTION

In the previous chapter of this research report a detailed account was given of the procedures that were used to bring the study to its conclusion.

A review of the literature and related research to this study compose Chapter II. The literature that was examined was limited to selected sources found in or available through the libraries of the University of Alberta, the Legislature Library, the Province of Alberta Archives Library, the Edmonton Public Library, the Glenrose Provincial General Hospital Medical Library and the Alberta Education Library.

In their book Rehabilitation and Medicine, Gullickson and Licht (1968), state that rehabilitation is primarily concerned with human values - the total nature of man, his uniqueness, his particular environment. One of the humanitarian commitments of modern society is restoration of the disabled to a life that is purposeful and satisfying. Rehabilitation encompasses the obligation to provide persons disabled or impaired by reason of accident or illness, with an opportunity to function adequately as family members, as citizens and as economic contributors (p. 10).

This point of view, put forth by these authors, is relatively recent in the history of civilization. It was not always so. There was a time in the history of mankind when physically handicapped persons were viewed as a drag on the tribe and disabled children, especially, often perished at a young age because of the harsh environment in which they lived.

A change in attitude toward the physically impaired came about during the Renaissance as a result of its accompanying humanistic philosophy. However, this new found philosophy did not encompass care, either treatment or education of the physically handicapped (Fait, 1978, p. 5).

Cruikshank (1969) pointed out that as various clinical groups of physically and mentally handicapped children came to the attention of professional personnel, attempts were made to meet their unusual needs.

Gallaudet in 1817 drew the attention of his society to the needs of deaf children whereas Mann, a few years later, helped focus attention on the needs of the mentally retarded. In the early thirties of the nineteenth century, the blind child became a part of this "needy" group and institutions were built in an attempt to meet the social and educational needs of visually handicapped children. In the following years, needed attention was gained by other groups of the handicapped such as crippled children, severely retarded children, emotionally disturbed children, and brain-injured children (p. 233).

The social awareness movement which concerned itself with the problems of the handicapped came into being in North America at the beginning of the twentieth century, around 1900. Momentum was added to this movement because of tragic consequences of disease or war. For instance, in 1916 an infantile paralysis epidemic took place and a few years later a number of soldiers returned from World War I who were either physically or mentally disabled. However, various services for the handicapped continued in a "holding pattern" until after World War II. These happenings helped to promote a new public awareness which, in turn, spurred legislative and educational assistance resulting in the opening of schools, clinics, and treatment centres for the physically handicapped. In their early stages of development most of the funds for these centres that were providing services for the disabled came from sources such as: charity and fraternal organizations, private donations, and community service organizations (Fait, 1978, p. 5).

REHABILITATION

Rehabilitation is the "process of restoring a person's ability to live and work as normally as possible after a disabling injury or "illness" (p. 869). In The Encyclopedia and Dictionary of Medicine, Nursing and Allied Health (1978) the following comprehensive definition for the term is given:

> aims to help the patient achieve maximum possible physical and psychological fitness and regain the ability to care for himself. It offers assistance with the learning or relearning of skills needed in everyday activities, with occupational training and guidance and with psychological readjustment. Rehabilitation is an integral part of convalescence. . . . The patient is encouraged to be active physically and mentally to the extent recommended by the physician. Physical therapy, occupational therapy, and vocational training are used extensively in the rehabilitation of severely handicapped individuals. (p. 869)

Du Rand and Du Rand (1978) give a brief definition for the term rehabilitation and see it as the process of re-investing with dignity or to anew the quality or state of being worthy. These authors stated: Rehabilitate (from the Latin root "habilis") to re-invest with dignity (Du Rand et al, no page number).

"Rehabilitation is primarily concerned with human values - the total nature of man, his uniqueness, his particular environment" according to Gullickson and Licht (1968) who further expanded on this concept when they stated:

> One of the humanitarian commitments of modern society is restoration of the disabled to a life that is purposeful and satisfying. Rehabilitation encompasses the obligation to provide persons disabled or impaired by reason of accident or illness, with an

> opportunity to function adequately as family members, as citizens and as economic contributors. (p. 10)

Gullickson (1968) wrote that the basis for wanting and offering rehabilitation is to be found in the Latin word "carites" and some of its meanings: respect, esteem, affection and value. He continues by stating that rehabilitation embodies the recognition of the dignity and importance of the individual and the need for a holistic approach in reintegrating the disabled person into his society (p. 31).

Rehabilitation in medicine is conceived of as a dynamic process based on a comprehensive, ongoing evaluation of each disabled person's specific limitations, abilities and needs (Dunham et al, p. 8).

Much impetus has been given to the process of rehabilitation as a result of the rising standard of living and changes in industrial practices and techniques. Shifts in population from rural to urban have also promoted greater use of rehabilitation.

Much of the literature refers to rehabilitation as holistic, the idea of blending many separate professions and para-professions into a whole where the efforts of the members of the team are directed at rehabilitating the disabled. The holistic concept was thoroughly discussed by Dunham et al. when these authors wrote the following:

> It is now recognized that total rehabilitation requires a multidisciplinary effort involving a wide range of professionals, para-professionals, and aides. Any account of the process must therefore do full justice to the specific contributions of the physiatrist, who plans and directs the individualized program; the various medical specialists responsible for treatment; the physical therapist, who develops or restores basic functions through exercise and training; the occupational therapist, who provides training in self-care, the use of assistive devices, homemaking, arts and crafts, and functional skills; the social worker, who helps the family and the patient utilize community resources and cope with practical problems such as medical bills and housing; the psychologist, who assesses the patient's emotional and intellectual status and provides supportive therapy; the vocational rehabilitation counselor, who evaluates the patient's skills and capacities and plans a placement, self-

> employment, or workshop program with the individual. In addition, many other specialists must be available to perform needed services: special educators, who provide remedial or developmental programs; recreation specialists, who organize a program of games, sports, dramatics, etc.; the speech pathologist, who analyzes and corrects faulty speech and communication patterns; the rehabilitation nurse, who provides physical care and emotional support in the hospital or other treatment center; and many others who may be involved on a full-time or part-time basis; orthotists and prosthetists; music, art, and dance therapists; industrial and manual arts therapists; mobility and driving instructors; corrective therapists; homemakers; and a corps of volunteer workers. (p. 9)

Rehabilitation is more than a philosophy, it is the comprehensive management of those who are physically dysfunctional, psychologically dysfunctional or both.

> To be worthy of its name, a rehabilitation program must respond to all the problems which accompany chronic disease or disability by involving professional personnel in an integrated manner, individualized for each patient.
>
> The major components of rehabilitation are medical restoration and maintenance of health, social and psychological as well as economic adjustment. (Gullickson et al., 1968, p. 10)

Although many of the components of rehabilitation can be applied to a school hospital setting where young children are taught, rehabilitation as a term does not seem appropriate where the patients are children. The London and District Crippled Children's Treatment Centre (1978) in a brochure defines rehabilitation as a process that:

> Builds upon abilities and relationships already established, and seeks to restore to the individual a level of function equal to that existing before an illness or accident. (pages not numbered)

This same brochure defines habilitation as:

> an ongoing process ensuring for the physically handicapped the closest possible approach to the normal learning and self-fulfilling experiences of any child, involving education, therapy and other techniques rooted in an appreciation of Human Development. Every aspect of child and family function may interact, for good or ill, with physical handicap, and the comprehensive approach encourages consideration of social, intellectual, emotional, recreational and practical skills, of

> all sorts rather than concentrating on any one feature of the child alone. (pages not numbered)

From a comparison of these two definitions it is noticed that rehabilitation builds upon various characteristics already established in a person. This is, of course, more prominent in adults than in children. In fact, the younger the child, the fewer the abilities and relationships already established. But the literature uses almost exclusively the word rehabilitation thus in keeping with this convention this paper will also use rehabilitation, even for the habilitation of younger children.

INCIDENCE OF PHYSICAL DISABILITIES

Lazure and Roberts (1970) in their book One Million Children - A National Study of Canadian Children with Emotional and Learning Disorders make the observation that the question of which, and how many, children are to be regarded as having emotional and learning disorders is difficult to answer. This question is difficult to answer because definitions for these terms differ as do their classifications, depending upon whether these definitions or classifications are based upon a medical or an educational model; or whether they are based primarily on cause, symptoms, or treatment (p. 51).

Dinnage (1972) supports the fact that confusion exists among definitions and classifications that are used and adds that the professions which deal with the multiple handicapped child need to realistically examine the classifications used in identifying multiple handicapped individuals. On this issue she wrote:

> there seems little evidence that the situation has been realistically examined, although the literature abound with references to the "problem" or the "challenge" of the multiple handicapped. Wolf (1965), reviewing the literature on the multiple handicapped blind, concludes that there is confusion

> about classification, inconsistence in the reported incidence and prevalence, and lack of method in teaching and in organization of services. The difficulties in making adequate care available for the multitude of different combinations of handicap are obviously immense. (p. 22)

Despite the shortcomings of definition and classification, authors such as Dinnage (1972, 1970), and Wolf and Anderson (1969) in their writings have shown that the number of multiple handicapped children in the Western world is increasing. These authors also reflect upon the reasons for this increase.

Dinnage (1970) is one author who believes that this increase is the result of a paradox, because, as a result of medical knowledge, many babies are now surviving - although handicapped - who would formerly have died (p. 20). Later Dinnage (1972) points out that the number of multiple handicapped children is increasing and that this increase may be the result of a greater awareness on the part of medical practitioners in identifying complicated handicaps.

Several other reasons were given by Wolf and others (1969) in their book The Multiply Handicapped Child for the statistical increase in handicapped children when they stated:

> Research relative to etiology and treatment of communicable and infectious disease, the establishment of improved public health services, advances in prenatal care and reduction of infant mortality, improved nutrition, increased education, and better housing have contributed to the higher incidence and prevalence of children with multiple handicaps. (p. 8)

To generate a more complete description of the exceptional child Dinnage (1972) suggests that some preliminary statistical, medical, and descriptive analysis of the multiple handicapped child population are badly needed (p. 21).

Wolf and Anderson (1969) point out that although the number of multiple handicapped children are increasing, studies on incidence and prevalence of such children are characterized by certain inconsistencies such as:

> Classification schemes based on disability, confusion in terminology, diverse criteria for defining disability categories, difficulties involved in differential diagnosis, and the unreliability of tests all make it difficult to compile statistics and to estimate the number of children in specific disability groups. (p. 9)

Nevertheless, examining Canadian Statistics published by Lazure and Roberts (CELDIC Report, 1970) one must view with some alarm the implications that these statistics have for society in Canada. Considering education in Canada the CELDIC report points out that:

> Perhaps the most we can say at the moment is that in any school age population in Canada, the probability is that somewhere between two and three percent of the children are in full-time special educational placements, and that teachers, and others, express concern about a further eight to twelve percent of children whose problems in behavior, self-management or learning are considered to need additional expert help both in and outside the school.
>
> In Canada, according to the 1966 census forty-two percent of the total population, or 8,400,000 children are nineteen years of age and under. If we accept the incidence figures of ten to fifteen percent, this means that between 840,000 and 1,260,000 children and youth have emotional and learning disorders and are the concern of the Commission. It is not surprising that we view with some considerable degree of alarm the magnitude of the challenge that faces Canada. We must not only provide adequately to meet the needs of close to one million children, but we must also organize our services in such a way that we can recognize and build on the strengths that many of these children display and not merely compensate for their deficiencies. (p. 59)

To ascertain whether the total number of children in need of special education services has changed since 1970 in Canada, statistical data was taken from government figures (January, 1980) indicating Canada's population was 23,809,800 while the Canada Yearbook (1978 - 1979) suggested that 39% of this number or 8,960,000 persons were nineteen years of age or under. Assuming the incidence of handicapped adolescents to be between ten to fifteen percent this would equal between 896,000 and 1,344,000 children and youth who have some form of handicapping condition.

With this higher incidence and prevalence of children with multiple handicaps it becomes very important that terminology used by educational and medical practitioners be consistent in order to promote the welfare of the child who is handicapped. This topic will be discussed in the next section.

TERMINOLOGY

The results from a review of rehabilitation literature shows that authors who have written on rehabilitation medicine or special education express concern about confusing terminology that is used in these two fields. This confusion of terminology may result from the overlap that exists in medicine and in education because both these professions provide services for handicapped clients. The literature that was reviewed indicates that it would be advantageous for professional practitioners from medicine and education to agree on common definitions but more importantly, agreement would influence the client in a more positive manner.

Fait (1978), an educator, in his writings makes the suggestion that the term "handicapped" be used to describe "children whose characteristics interfere with their achieving optimum development through the regular education offerings of the school" (p. 3). This author further suggests that this definition is appropriate because it describes the circumstances of the person who is at a disadvantage but should such disadvantage be overcome to the extent that he is no longer at a disadvantage, that person would no longer be considered handicapped.

Holt (1956) in his article entitled: "A Suggested Classification of Handicapped Children", suggests that a more uniform approach to labelling handicapped children must be found if all aspects of the child are to be appreciated. He defined "handicap" in the following way:

> A handicap is a relative condition and its definition is difficult. Children may be considered to be handicapped, if, mentally or physically, they lag behind their contemporaries, or if they require special care, or if they have to make special adjustments in educational, emotional, or social spheres. Whatever definition is used there will always be a number of border line cases. (p. 355)

The London and District Crippled Children's Treatment Centre (1978) in its pamphlet Thames Valley Children's Centre give a definition for "physical handicap" implying that a mastery over one's environment sets the handicapped apart. They wrote that physical handicap:

> implies some disorder of bodily structure or function which tends to prevent the individual achieving mastery over the physical world to the extent that his intellectual abilities and personality would otherwise allow. (pages not numbered)

That the area of definition of certain words is fuzzy and not clearly demarcated is indicated by the Warnock Report, the result of a recent enquiry into the special needs of children in England, Scotland and Wales. The Report (1978) suggested that:

> There is no agreed cut and dried distinction between the concept of handicap and other related concepts such as disability, incapacity and disadvantage. Neither is there a simple relationship between handicap in educational terms and the severity of a disability in medical or a disadvantage in social terms. (p. 36)

The Report further questioned what precisely constitutes an handicap?

The implications of not being able to establish a precise definition for "handicap" are many in terms of individual needs and educational programming.

> Yet the idea is deeply engrained in educational thinking that there are two types of children, the handicapped and the non-handicapped. Traditionally the former have generally been thought to require special education, and the latter ordinary education. But the complexities of individual needs are far greater than this dichotomy implies. Moreover, to describe someone as handicapped conveys nothing of the type of educational help, and hence of provision that is required. (p. 37)

However, descriptive terms will be needed for particular groups of children who require special education provision and it would seem that present terms in use for children with physical and sensory disabilities are acceptable (p. 43).

The Calgary Board of Education in its Study on the Integration of Handicapped Students (1978) also addresses itself to the topic of definitions and explains that using medical categories to categorize handicapped students not only limits the prescription of an educational program for a student but it may also "cause inappropriate grouping of students, carry expectations of low achievement levels, stigma is attached to them, and diagnosis is not always accurate" (p. 13). Present trends suggest that educational deficit or learning requirement of the student will form the basis for defining "handicapped". However, "educationally-based definitions of handicapped are not yet developed to the point where concensus among school systems or curriculum planners has been received" (p. 13).

Writing about the school placement of physically handicapped students Haskell and Anderson (1969) suggest placement is often done on an arbitrary basis and seems to involve to a greater extent psycho-social factors. In fact, these authors continue by stating that the term "physically handicapped" doesn't help either since it involves such a diverse group of children that it might be more useful to use the terms "orthopeadically handicapped" and "brain damaged" (p. 52).

However, Dunham and Dunham (1977) take the position that many people who differentiate between disability and handicap think of "disability" with a positive connotation and give "handicap" a negative connotation (p. 13).

Because of the way society has treated handicapped people in the past, communities view people with special needs as different or deviant. This is especially true of individuals with physical disabilities whose handicaps are usually very obvious. Reflecting upon the deviance, Wolfensberger writes in The Principle of Normalization in Human Services (1972) that when a person is perceived as deviant he is cast into a role that carries with it powerful expectancies. Strangely enough, these expectations take hold not only on the mind of the perceiver but on the perceived person as well. Wolfensberger continues by stating that he believes it to be a well established fact that a person's behavior tends to be profoundly affected by the role expectations that are placed upon him (p. 15).

Alberta Education (1981) in its publication Educable Mentally Handicapped (curriculum guide) gave support to the position taken by Wolfensberger when it implied that the "deviant" attitude in the community toward the handicapped makes it very difficult for a person with a handicapping condition to lead a normal life (p. 3).

Basically the distinction between "disability" and "handicaps" amounts to one of proper usage. It has been said that:

> A society makes a disability by creating a culture in which certain tools are required for behavior. Variations in physique by themselves have little psychological meaning outside of the frame of reference in which they are evaluated. (Meyerson, 1971, p. 9)

Handicap has been defined by the Encyclopedia and Dictionary of Medicine, Nursing and Allied Health (1978) as:

> any physical or mental defect or characteristic that prevents a person from taking part freely in the activities appropriate for his age. A handicap may be the result of an accident or a disease, or it may be congenital. (p. 439)

Thus it may be assumed that a disability will not necessarily make a person handicapped although a handicapped person may have a disability. Therefore, a disabled person with a missing finger may be handicapped if a situation requires fine dexterity from him, yet in another situation where gross motor control is needed, that person may not be regarded as handicapped.

Students may thus be seen as handicapped in one educational program but not in another. Thus "handicapped" is a more suitable term than "disabled". Government programs and legislation, as well as popular literature, rely on the term "handicapped" (Dunham and Dunham, 1977, p. 12). (For a more comprehensive discussion see the section on "Operational Definitions").

EDUCATION

The earlier education institutions for atypical children were characterized by a curriculum which emphasized training of the mind. Little consideration was given to the other needs of the atypical student. Various authors (Frostig, 1976; Cruickshank, 1971; Kirk, 1972) have suggested a newer trend in education which must take into account development of all the potentialities of each student. Frostig (1976) draws attention to the needs of the student by using a global context when she says that:

> no education can be effective if it is not adapted to the needs of the children, the present needs of society, and the needs of mankind in the future. If the needs of the children are not satisfied their development will be stunted; if the needs of the present society are not satisfied, education will not make a positive impact on contemporary life; and if other needs of the future are not taken into account, mankind may not survive. (p. xiii)

Implicit is the view that there must be a balance between teaching basic skills, establishing knowledge of the child's community and presenting opportunities for personal development through activities such as the expressive arts. These are not dichotomous elements but the essential components of a coherent curriculum (Inman, 1980, p. 12).

Special education must of necessity be a multi-faceted program. It must allow for the development of academic skills, practical skills, social skills, emotional skills and life skills; yet be flexible enough to forego studies in any one area should this prove to be a negative experience for the handicapped student. With multiple handicapped students, whose learning abilities are already limited by their disabilities, education must build upon the student's strong ability. Learning will result if the subject matter is relevant to the handicapped individual.

From the viewpoint of society, it is clear that among other things, the educational system makes for social cohesiveness, economic efficiency, political stability and scientific and cultural advancement. The Commission on Emotional and Learning Disorders in Children, (CELDIC, 1970) completed a national study of Canadian children with emotional and learning disorders and in its final report implies that from the point of the individual, his education should not only help to prepare him to live in society, but also enable him to develop his own unique potentialities to their fullest extent (p. 71).

The Multiple Handicapped Child - An Example

A multiple handicapped child is any child with more than one physical or mental disability which requires special services or which makes the child's adjustment impossible in the home or in the regular class (Cruickshank, 1969, p. 234). A medically oriented definition for a multiple handicapped child is given by Wolf and Anderson in their book The Multiply Handicapped Child (1969). These authors define the child with multiple handicaps as:

> a person between birth and the age of majority who has personal and social burdens imposed on him when confronted with a situation that cannot be resolved by reason of two or more body dysfunctions or impairments and whose disabilities or impairments are so severe that it is impossible to profit from a program established for any one of the disabilities. (p. 366)

Most cerebral palsied children are multiple handicapped because they have two or more body dysfunctions. This was probably one of the major reasons why some members of society twenty five years ago regarded these children as a hopeless problem. Today, in the 1980's they are no longer regarded as a hopeless problem because of advances in science and medicine and individuals in the professions who work with these children realize there is still much to be done before these children are fully integrated into society.

Medically, the subject of etiology of cerebral palsy is a complex one. This is confirmed by the results of recent research which revealed new aspects of this complexity (Personal Communication with Dr. J. Tizard, Glenrose School Hospital, Nov. 5, 6, 1981). One of the major weaknesses of medical research is that it has not investigated the interrelationships of damaging factors of cerebral palsy. Researchers in medicine have just begun to explore the field.

The cerebral palsy child can present a very severe educational problem not only in terms of selecting an appropriate curriculum but also in terms of assessing the educational needs of this learner.

The Exceptional Child is Unique

Because the disabled are regarded as a nonolithic group, people are disinclined to recognize the individuality of every disabled man, woman and child (Royal Bank Letter, May, June, 1981). It has been established that large numbers of physically handicapped children differ markedly in their mental, physical, emotional, and behavioral characteristics than their peers who do not have these handicaps. The former group of children requires special help in realizing their optimum potential. In a democratic country like Canada, education for all is a basic tenet, and the opportunity for each individual to develop to his fullest potential is a guiding principle of the educational system of this country. However, in the progress toward equalized opportunities for all, the handicapped have not always received due consideration (Fait, p. 4).

The student who is atypical must be seen as a total personality in the same way that any other school going child is seen. The needs of the handicapped are not unlike the needs of the normal child. Reflecting upon those needs. Stafford in his book Sports for the Handicapped (1947) notes that society has the responsibility to see to it that each handicapped child has the opportunity to develop to his or her maximum potential. He wrote that:

> a majority of physically and mentally handicapped children possess aptitudes and abilities, which, when developed by proper social, academic, and vocational training, can make these children socially and economically independent. To every child we owe the opportunity to develop to the maximum of his capacity. (p. 10)

There is no doubt that an education restricted to the "three R's" is clearly insufficient for the handicapped child. Fundamentals are important, but in response to the stresses of the Canadian culture education is forced to infinitely wider aims. In fact, the CELDIC report (1970) in discussing the needs of the handicapped states that "too much adherence to the course of study leads to a conformity that stifles originality and creativity both in the teacher and the brighter child and sets up situations of inevitable failure for the less able child" (p. 108).

Furthermore, the report states that in Canada's schools were found an almost slavish adherence to the printed word which seems to ignore the important lessons that have been learned from the mass media in recent years, that there are more and often better ways of learning than from the textbook (p. 109).

Curriculum Prerequisites

The common characteristic of all new forms of education is that they are planned to serve the needs of individual children and their families instead of requiring children to fit the mold designed by the schools. Experiences have guided teachers of the handicapped into somewhat broader perspective with a variety of resources made available to them, with which to educate the student. The physically handicapped, like other learners, needs a variety of experiences in spite of their handicaps. Any experience for these individuals that will lead to independence physically, mentally, or emotionally must be offered (Stark, p. 230).

Marianne Frostig (1976), an American educator, psychologist, and crusader for the promotion of relevance in curriculum for exceptional children states that:

> certain traditional practices clearly need to be amended. We cannot help children to become responsible if we do not permit them to take responsibility. We cannot help children learn to cooperate if they sit in five straight rows, facing front, not permitted to speak. We cannot help children to care for each other if we track them into ever more homogeneous groups. We cannot help children to plan if all plans are made by the teacher. We cannot help children to find their own best ways of learning if all are required to learn in the same way. We cannot help children to become deeply involved in learning, doing, and creating if we continually interrupt them with bells and schedules. If we are unable to make the necessary accommodation to help children, we are working against the interests both of the children and of society. (p. 37)

Each teaching/learning situation is unique and requires delicate implementation of carefully planned activities by sensitive and experienced teachers. Phelps (1978) took the position that it is the responsibility of a dedicated teacher to replace a technique that is ineffective. On this issue he wrote:

> The effect that dedicated teachers have on the lives of "students who are difficult to teach" relies heavily upon their enthusiasm, ingenuity, creativity and a degree of tenacity in continuing to utilize effective techniques and to search for new ones to replace ineffective ones. (p. 23)

On this same issue Frostig (1976) in her book Educating for Dignity wrote that knowing when methods do not work and when approaches need change is usually very difficult. It requires especially sensitive observation or "seeing" and thus the author quotes Lilian Weber who wrote:

> Perhaps the important estimate the teacher must make in her "seeing" is whether a child is growing at all, whether he has stopped growing, whether in fact something is blocking growth - in which cases, there is a distinct indication to see further and indeed to seek help outside the teaching role for the "seeing". (p. 42)

The quality of schooling and the expertise of the teacher are two factors which have a direct influence on the effectiveness of the curriculum. Motivation, joy and excitement on the part of the learner in learning depend to a great extent on the teaching techniques employed and classroom climate that is provided and it is without exception that the child, regardless of his "classification", is not to feel joy in explaining and learning about new things (Frostig, 1976, p. 16). Yet it appears that handicapped students, due to their disabilities, are much more liable to lose or gain from various school conditions than normal children. This is illustrated by Rutter (1980), a medical doctor, who wrote:

> it should be noted that children with chronic physical disorders and especially those with neuroepileptic conditions have a substantially increased rate of both psychiatric and educational problems. Their liability to school difficulties is a consequence of their physical disability, but the extent of their educational handicap may be influenced by the characteristics of the schooling they receive. (p. 208)

With regards to special teacher training and integration of handicapped students Brewer and Kakalik (1970) reported that:

> The Department of Health, Education and Welfare (HEW) needs to improve its programs which assist in preparing teachers for the handicapped.
>
> a) The majority of handicapped students spend most of their school day in regular classrooms, yet regular classroom

> teachers generally have not received training in the skills needed to effectively teach them.
>
> b) Handicapped students vitally need vocational instruction, yet they are intentionally excluded from the school's vocational training programs by teachers untrained in methods for teaching the handicapped. (p. 410)

Relevancy of Goals

Valletutti and Christoplos in Interdisciplinary Approaches to Human Services (1977) discuss the implications of setting and identifying goals in education. In their discussion these authors take into account the fact that educators spend as much time justifying outdated curricula as they do in examining values and needs that are current and relevant. Like many other professions, the technology of "how" has far outdistanced the ability to answer value questions of "why" and "to what end" (p. 83). How much and how well one learns are undeniably related to what one is required to learn. Thus educational goals must be dynamic and fluid enough to be sensitive to the uniquely developed and expressed student indicators (measurable and intuitive) that suggest a proper curriculum has been implemented or still needs to be identified (p. 84).

However, Frostig (1976) notes that educators recognize the need for current and relevant goals as evidenced by the fact that:

> such measures as the adjustment of curricula to the needs and abilities of the handicapped child and the institution of innovative projects characterized by diversified and individualized curricula designed to satisfy the needs of the children. (p. 31)

In order to satisfy the needs of handicapped children, especially the multiple handicapped, many innovative teachers consider helping children to find satisfaction in human relationships as important an educational goal as they do the acquisition of academic expertise. Frostig (1976) believes it is the interpersonal relationships that helps to lay the ground work for the students mental health. On this issue this author wrote:

> Helping the child to enjoy interpersonal relationships with classmates and teachers not only makes life in school more pleasant, it also lays the groundwork for the child's present and future mental health. It develops the capacity to appreciate the feelings and values of others and prepares the child for cooperative effort in all aspects of his life. (p. 31)

Educational Assessment

Mauser, in his book Assessing the Learning Disabled: Selected Instruments (1981) gives the following definition for the term assessment as it applies to the learning disabled:

> Assessment of the learning disabled is an analysis of the way the individual performs on a variety of tasks from a variety of appropriate measures in a variety of settings. The array of information received is to provide the individual assessed and his/her parents, teachers, school personnel, employers, and other involved professionals with viable information that will benefit the assessed individual's education and vocational development. (p. 25)

The author further suggests that many individuals view the terms testing and assessment as synonymous but he feels that these terms are really not interchangeable since assessment is much more of a complex process than the administration of a test (p. 4).

Furthermore, the assessment situation is not always very structured nor formal nor is the child given a battery of highly specialized, standardized tests. Smith and Neisworth (1969) suggest that it is reasonable to have teachers take a more active part in the assessment process because they are in the best position for appraising children's learning problems (p. 47). Assessment should be an ongoing part of the teaching process.

As is often the case with assessing multiple handicapped children, the assessor must draw upon his ingenuity and knowledge to adapt or create an original tool that can be used by a child to give an indication of his level of functioning. Wallace and Kauffman (1978) believe that a wide variety of techniques* should be used to assess children with learning problems (p. 3).

There are a number of reasons for the use of assessment** but one of the main reasons in education for assessing a student is to establish at what academic level the learner is functioning. Thus the assessment model must not only be flexible but it must also have the potential for determining what diagnostic - intervention strategies should be used to remediate a student's educational problems. Mercer and Ysseldyke (1977) organized a conceptual model of assessment for educational purposes which closely describes the assessment process. The authors describe their task analysis model as follows:

> The Task Analysis (Skill) Model. The task analysis model, like the psychoeducational process model has been implemented primarily in educational settings. This model promotes assessment of academic skill development and accordingly designs differential teaching strategies to advance the individual from present status to where we want the individual to be. Individuals are not compared with each other so no distinction between normal and abnormal is made. Emphasis is on the content that the individual has mastered rather than on any concept of deviation from the normal. This is a behavioristic based

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*Techniques for Assessment

Some of the assessment techniques mentioned were: Observation, screening devices, check lists and rating scales, informal consultations, structured interviews, work sample analysis, task analysis, norm referenced tests, and criterion referenced tests.

**Purposes of Assessment

The authors mentioned the following purposes of assessment: To make screening decisions, to group or classify the population, to evaluate potential and accomplishments, to foster educational and vocational goals, to plan and design appropriate programs of a remedial or compensatory nature, to measure and evaluate outcomes of instruction, to certify the individual's present achievement status, and to serve as a data base for present and future research.

> model that reduces expected tasks into component skills. The identified skills are then taught although alternative routes for achieving the terminal behavior may be taken. Measurement instruments are primarily criterion referenced that should indicate the extent to which the individual demonstrates behavior necessary to successful completion of the task. Development of such criterion measures requires a thorough knowledge of the curriculum and sequence of content that is to be acquired by the learner. (p. 28)

To have effective teaching, educational program planning must be based upon adequate assessment of the child. Teachers must incorporate the assessment data in developing an instructional program for individual children (Wallace et al. 1978, p. 63).

Much has been written about the purposes of assessment and its application. Assessments should be used with caution but every physically handicapped child deserves a competent and comprehensive assessment and long term plan to help that child make the most of life (Apley, 1962, p. 291). However, the cerebral palsied child for instance, presents a very severe problem in terms of assessment. Dinnage (1970) elaborated on the types of impairments that may affect the reliability of educational assessment of cerebral palsied children when she wrote that:

> The special impairments in perception and expression which may be present as well as more obvious physical handicaps make it probable that assessment of potential ability cannot be completely unreliable. (p. 35)

It seems unlikely that test designs can ever be written that would be reliable with children who are cerebral palsied because as Dinnage emphasized scores that these students make on these must be regarded with caution (p. 3).

Discussing the requirements of effective assessment Warnock (1978) believes that there are four essential conditions which must be met:

> 1. Parents must be closely involved. No assessment of a child's needs can be complete without the information which

> his parents can supply and no educational programme prescribed to meet his needs can be complete without their cooperation.
>
> 2. Assessment should aim to discover how a child learns and responds over a period, and not merely how he performs on a single occasion.
>
> 3. Assessment must include the investigation of any aspect of a child's performance that is causing concern.
>
> 4. The family circumstances as a whole must be taken into account. (p. 59)

The Multi-discipline Environment

Multi-discipline settings promote the well-being of patients by pooling members of the team, both professional and para-professional, resources on behalf of the patient. Generally, education is one of the resources available to patients or students and should provide them with experiences so that they are better able to adjust themselves to live a happy, useful, productive life in an everchanging social order, because of their experiences while in school (Stafford, 1947, p. 32).

However, the mechanisms operating in a hospital are more complex since members of the multi-discipline team work with each student. In this type of teaching setting the teacher is considered a generalist with a gestaltist perspective who looks at the student's broad life-style and future goals. Valletutti et al. (1977) suggest that the teacher as a "generalist" and team member:

> Must focus attention on acquisition of strategies of learning and problem solving, attitudes and values related to continual learning; intelligent and active citizenship, vocational and social competencies, aesthetic and humanistic awareness, health and recreational habits. (p. 85)

The teacher, employed in a multi-discipline setting, must apply information received from other disciplines to the total learning environment for the benefit of the handicapped student. The educator is in an advantageous position to do so since students spend much of their time in contact with this discipline and, therefore, much of the treatment intervention will be realized through education.

The Warnock Report (1978) also debated the importance of interdisciplinary cooperation and communication and intimated that it can not be overstressed. There ought to be no reluctance on the part of "medical, nursing and other staff to give full recognition to the contribution which educators can make" as members of the multi-discipline team to the development of all children, however serious their disabilities (p. 148). The Report recommends that:

> Much closer communication needs to be established between teaching and other staff in hospitals in the interests of breaking down the barriers that too often exist between them. It is desirable that nursing staff should be closely associated with the educational programmes devised for individual children. (p. 148)

The Warnock Report also comments on the fact that hospitals are demanding places in which to teach since one must have the capacity to deal with disabilities, deformity and death, and as well - teach children who are gravely ill or disturbed. Thus the Report suggests that hospital education programs be monitored to ensure that:

> teachers in hospitals should receive support from our proposed special education advisory and support service and we recommend that within the service there should be advisers who specialise in education in hospital. Their task would be to ensure that the educational needs of children in hospital are adequately met, to provide support and advice to the teachers and to ensure that there is close co-ordination between teachers in hospital schools and local ordinary and special schools. (p. 148)

Industrial Education

The Handbook in Industrial Education (1979) makes mention of two points which have relevance to all students including those who are multiple handicapped. In fact, they are significantly important to the handicapped since the two points deal with a life plan and the development of psycho-motor skills. It is noted in the Handbook that:

> The educational program in our schools must give students an opportunity to start a life-plan - a plan that prepares them for coping with their needs immediately following school, yet at the same time allowing considerable opportunity to diversify their choice of career options. The Industrial Education program provides such options through the introduction of courses that can be sequenced in a number of patterns. Such a program capitalizes on the students' interests while adding relevance to the tool subjects such as math, science and English. (p. 2)

Industrial Education has been defined by authors such as Silvius and Curry (1956), Baird (1972), and Andrew and Ericson (1976) as a generic term:

> used in referring to industrial training, vocational-industrial education, industrial arts, technical education, apprenticeship, and the offerings of private trade schools. It is concerned with all education which has been adopted to meet the needs of industrial technology, and to interpret industry. (Silvius and Curry, 1956, p. 461)

This model was graphically represented by Baird (1972) and is shown in Figure 1.

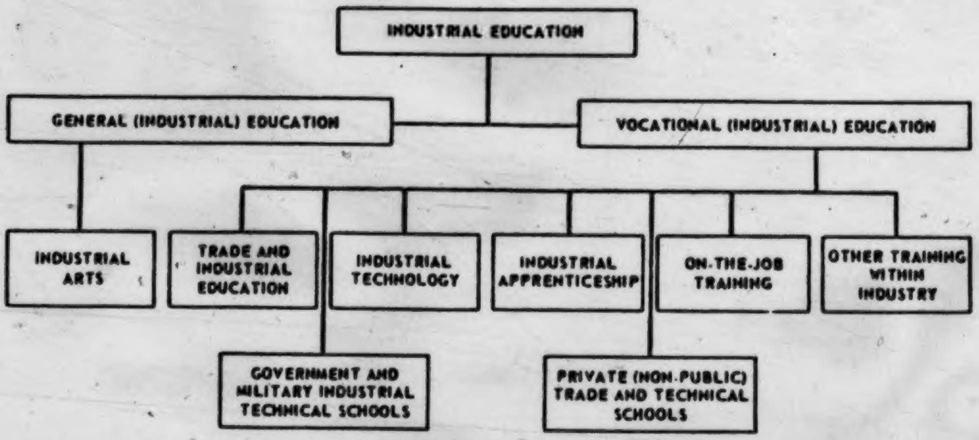
However, Alberta Education (1979) defines Industrial Education in such a way as to exclude post-secondary courses and/or training. This is not in keeping with the above definition. Alberta Education sees Industrial Education as:

> a program consisting of courses that provide a continuum of experiences and activities in the elementary and junior high school, expanding in the high school to the development of skills in career fields, and culminating in on-the-job experience. (p. 2)

In Handbook in Industrial Education (1976), Alberta Education suggests that the Industrial Education program is concerned with career

FIGURE 1

COMPONENTS OF INDUSTRIAL EDUCATION


INDUSTRIAL EDUCATION
GENERAL (INDUSTRIAL) EDUCATION
VOCATIONAL (INDUSTRIAL) EDUCATION
INDUSTRIAL ARTS
TRADE AND INDUSTRIAL EDUCATION
INDUSTRIAL TECHNOLOGY
INDUSTRIAL APPRENTICESHIP
ON-THE-JOB TRAINING
OTHER TRAINING WITHIN INDUSTRY
GOVERNMENT AND MILITARY INDUSTRIAL TECHNICAL SCHOOLS
PRIVATE (NON-PUBLIC) TRADE AND TECHNICAL SCHOOLS

SOURCE: Baird, R. J. Contemporary-Industrial Teaching: Solving Everyday Problems. South Holland Ill.: The Goodheart Willcox Co. Inc., 1972, p. 6.

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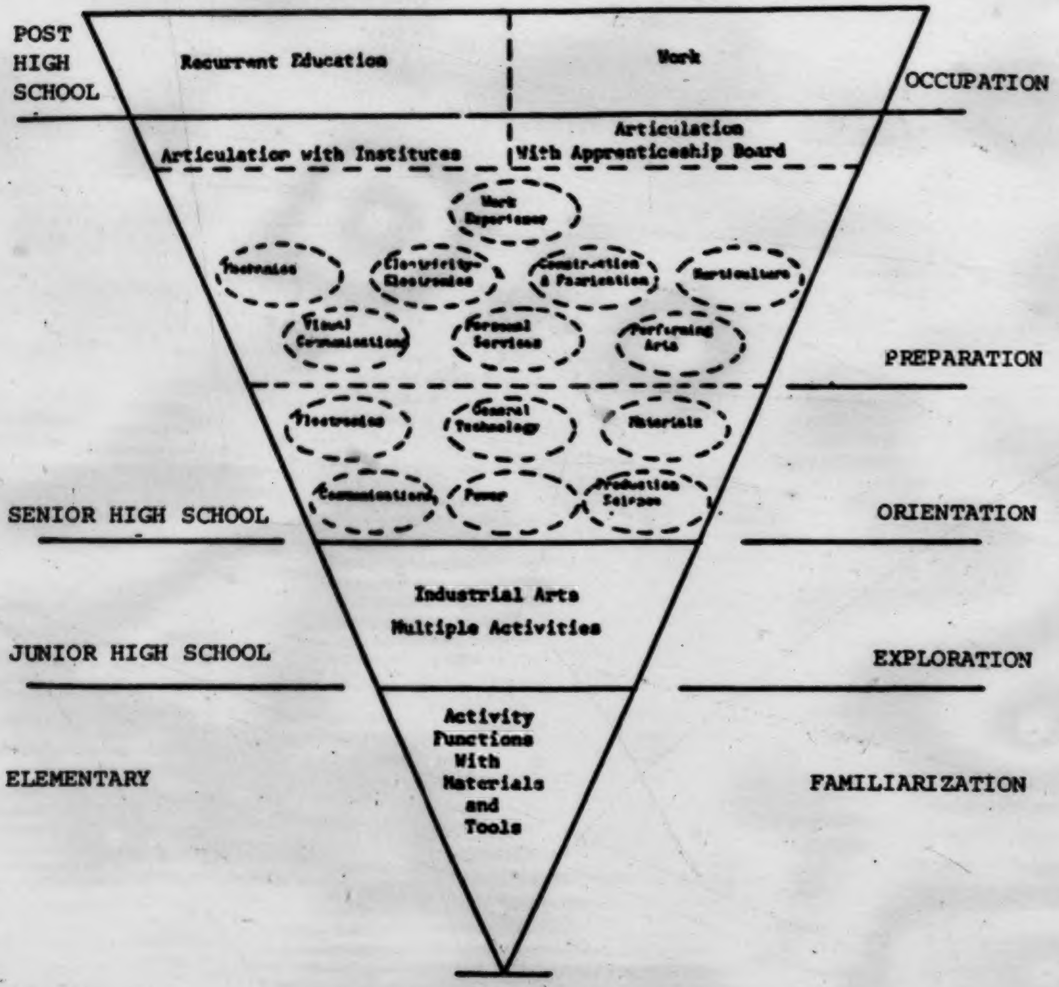
development. This means that students are given skills which will allow them considerable flexibility in the selection of a career choice. Since today careers do not develop along predictable lines a broad foundation of skills is required by students for career specialization (p. 1). These skills are obtained by following a continuum of courses culminating in career fields. Figure 2 illustrates the Alberta Industrial Education Program with the Bottom of the triangle representing the entry point or the awareness or familiarization stage. As the student matures he moves upward to exploratory, orientation, preparation and finally an occupation. The seven career fields of Visual Communications, Mechanics, Construction and Fabrication, Electricity/Electronics, Personal Services, Performing Arts, and Horticulture are shown in the "Preparation" stage of the triangle. Figure 3 gives a more detailed description of the career fields.

FIGURE 2

ALBERTA INDUSTRIAL EDUCATION PROGRAM
FOR
CAREER CHOICE AND DEVELOPMENT


POST HIGH SCHOOL
Recurrent Education
Work
OCCUPATION
Articulation with Institutes
Articulation With Apprenticeship Board
Work Experience
Mechanics
Electricity-Electronics
Construction & Fabrication
Horticulture
Visual Communications
Personal Services
Performing Arts
PREPARATION
Electronics
General Technology
Materials
Communications
Power
Production Science
SENIOR HIGH SCHOOL
ORIENTATION
Industrial Arts
Multiple Activities
JUNIOR HIGH SCHOOL
EXPLORATION
Activity Functions With Materials and Tools
ELEMENTARY
FAMILIARIZATION

LEGEND: ——— Solid line indicates levels

------ Broken lines and open spaces indicates opportunity to transfer to other options

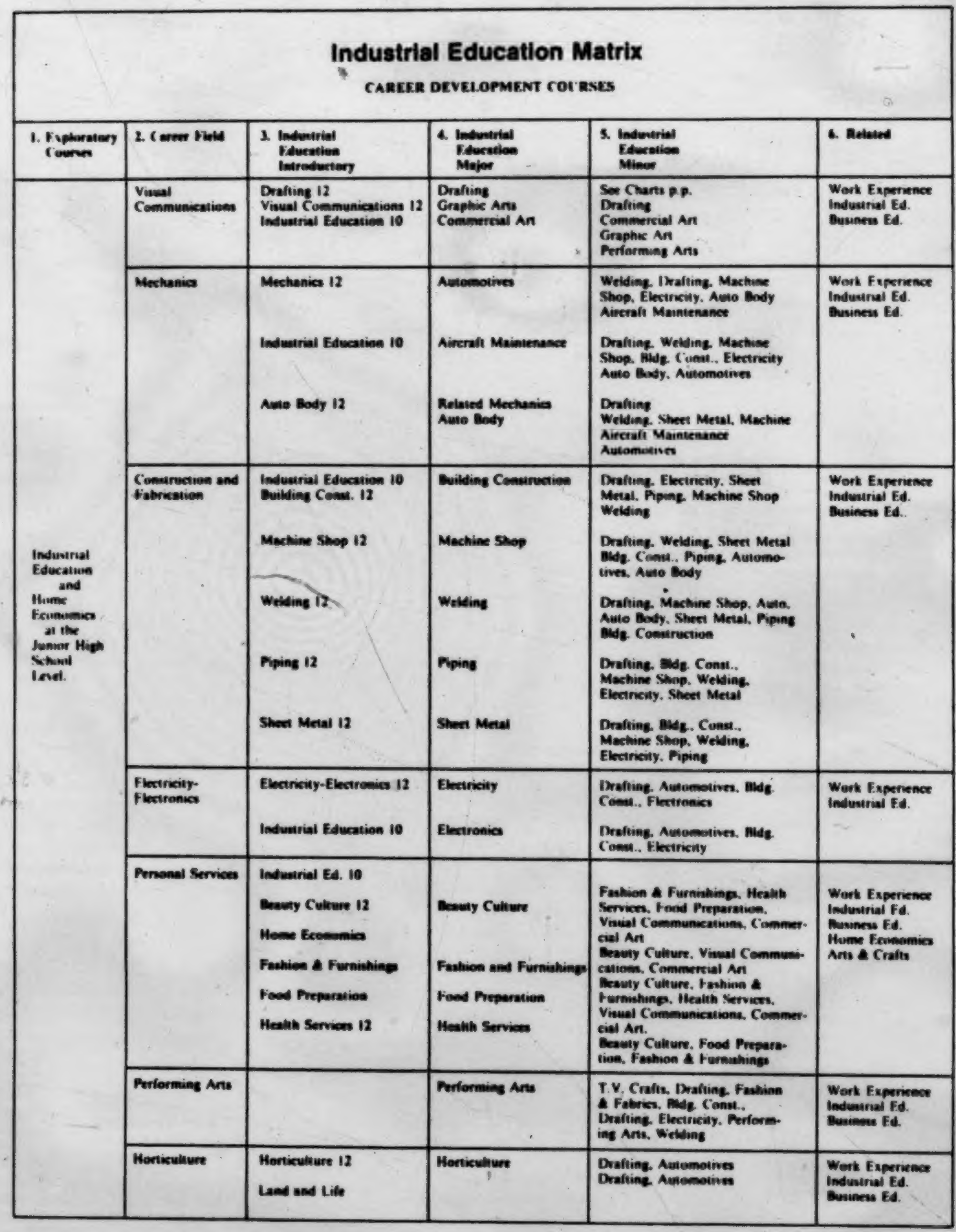
SOURCE: Alberta Education. Handbook in Industrial Education. Edmonton: Author, 1979, p. 2.

FIGURE 3

THE INDUSTRIAL EDUCATION MATRIX

AND

CAREER FIELDS OF ALBERTA



Industrial Education Matrix

CAREER DEVELOPMENT COURSES

1. Exploratory Courses	2. Career Field	3. Industrial Education Introductory	4. Industrial Education Major	5. Industrial Education Minor	6. Related
Industrial Education and Home Economics at the Junior High School Level.	Visual Communications	Drafting 12 Visual Communications 12 Industrial Education 10	Drafting Graphic Arts Commercial Art	See Charts p.p. Drafting Commercial Art Graphic Art Performing Arts	Work Experience Industrial Ed. Business Ed.
	Mechanics	Mechanics 12	Automotives	Welding, Drafting, Machine Shop, Electricity, Auto Body Aircraft Maintenance	Work Experience Industrial Ed. Business Ed.
		Industrial Education 10	Aircraft Maintenance	Drafting, Welding, Machine Shop, Bldg. Const., Electricity Auto Body, Automotives	
		Auto Body 12	Related Mechanics Auto Body	Drafting Welding, Sheet Metal, Machine Aircraft Maintenance Automotives	
	Construction and Fabrication	Industrial Education 10 Building Const. 12	Building Construction	Drafting, Electricity, Sheet Metal, Piping, Machine Shop Welding	Work Experience Industrial Ed. Business Ed..
		Machine Shop 12	Machine Shop	Drafting, Welding, Sheet Metal Bldg. Const., Piping, Automotives, Auto Body	
		Welding 12	Welding	Drafting, Machine Shop, Auto, Auto Body, Sheet Metal, Piping Bldg. Construction	
		Piping 12	Piping	Drafting, Bldg. Const., Machine Shop, Welding, Electricity, Sheet Metal	
		Sheet Metal 12	Sheet Metal	Drafting, Bldg., Const., Machine Shop, Welding, Electricity, Piping	
	Electricity-Electronics	Electricity-Electronics 12	Electricity	Drafting, Automotives, Bldg. Const., Electronics	Work Experience Industrial Ed.
		Industrial Education 10	Electronics	Drafting, Automotives, Bldg. Const., Electricity	
	Personal Services	Industrial Ed. 10			Work Experience Industrial Ed. Business Ed. Home Economics Arts & Crafts
		Beauty Culture 12	Beauty Culture	Fashion & Furnishings, Health Services, Food Preparation, Visual Communications, Commercial Art	
		Home Economics			
		Fashion & Furnishings	Fashion and Furnishings	Beauty Culture, Visual Communications, Commercial Art	
		Food Preparation	Food Preparation	Beauty Culture, Fashion & Furnishings, Health Services, Visual Communications, Commercial Art.	
		Health Services 12	Health Services	Beauty Culture, Food Preparation, Fashion & Furnishings	
	Performing Arts		Performing Arts	T.V. Crafts, Drafting, Fashion & Fabrics, Bldg. Const., Drafting, Electricity, Performing Arts, Welding	Work Experience Industrial Ed. Business Ed.
	Horticulture	Horticulture 12 Land and Life	Horticulture	Drafting, Automotives Drafting, Automotives	Work Experience Industrial Ed. Business Ed.

SOURCE: Alberta Education. Industrial Education Newsletter, 1979, xi(2), p. 14.

Dinnage (1970) suggests that authors such as Heywood, (1960); Karlson et al., (1965); Lorring and Mason, (1966), have been concerned with the disparity that exists between the amount of attention paid to the cerebral palsied child's education and the actual practical possibilities of that individual getting work and some degree of independence in adulthood. The handicapped school graduate's future is a crucially important topic, but there are few relevant facts available in the literature (p. 36). Research on achievement in various schools by cerebral palsied children has not been conclusively documented, nor how many of these graduates go on to further training, nor how many of them are eventually employed in a business or industrial environment.

Yet, wholesale integration is not the answer either. Wall (1976) discusses the problem that exists with integration due to the diversity of individuals who comprise the physically handicapped group. There is need for the setting of accepted criteria so that prospective participants can be identified and matched to suitable vocational programs (p. 17).

Industrial arts, prevocational education, and vocational education all deal with various aspects of the world of work. Generally speaking these courses focus on various degrees of practical skill development, each of which is an integral part of the skill hierarchy. This skill hierarchy has at its lowest level skills that are categorized as unskilled, skills which can be acquired with a minimum amount of training and time. At the opposite end of the hierarchy are skills that require extensive training and time for an individual to acquire. These skills are classified as professional skills.

Vocational guidance as an integral part of all these courses, should provide exposure to the handicapped child so that the learner can gain comprehensive knowledge of the world of work. Illustrating that industrial arts has a single overall role to play which is vitally important to members of present day industrialized society - handicapped or non-handicapped - Harder (1968) wrote:

> Industrial arts has a unique place to fill in an education program whose objective is the development of an informed citizenry in a highly industrialized society, a society that must learn to use and control the technologies. (p. 53)

Focusing upon the neurologically handicapped, Sterling (1968) writes that various interest groups have led parents and the community to expect and request vocational opportunities for this handicapped group but as yet little is forthcoming. These children, the author adds, are likely to require highly sophisticated vocational guidance which calls for the cooperation of a variety of professions (p. 421).

Education for the handicapped that is given in institutions and special schools presents a number of special problems which are not inherent in the educational process found in regular schools. These problems not only deal with special adaptations but more importantly with personal qualities and habits. Sterling (1968) enlarges upon this by saying that:

> Reliability, punctuality, self-sufficiency, and a compatible personality are essential, regardless of the occupation. Tutors, special classes or schools, and treatment centres frequently foster dependence, social immaturity, and unpredictable performance by adopting protective, permissive attitudes. (p. 426).

Although the problems are not insurmountable it is imperative that educators be attentive of these problems if employability and job placement for the students are to be considered.

Physical impairments do not automatically involve lower mental functioning (Weisgerber, 1978). For example, "cerebral palsy may be associated with brain damage, but it should not be assumed that the student with cerebral palsy is incapable of learning intellectually oriented vocations" (p. 26).

One of the few authors to make mention of industrial arts for children who are psychosocially dysfunctional, is Stark (1969) who wrote about his experiences with brain-injured children. This author provided insight into the scope of that program when he stated:

> Industrial arts is offered for one half a year in both seventh and eighth grades to all the special class pupils where they have an opportunity to develop and explore manual skills. They work with ceramics, metal and glass. In the ninth grade they can choose industrial arts as an elective subject. Woodworking, electrical design, metal work, and general tool experiences are offered in the industrial arts shop. (p. 218)

Although Stark does not describe the degree to which these students are handicapped it may be assumed that many of them are not necessarily multiple physically handicapped. Thus manually they would be capable of doing many things. Furthermore, he suggests that for the vocational teacher of exceptional students there is a special job to do, namely:

> The vocational teacher of the special child must endeavor to teach self-reliance, initiative, self esteem, and reassurance, and he should gain great satisfaction from giving the students a feeling of self confidence as well as having them learn to do their jobs well. (p. 249)

Goodman in her article "Vocational Education for the Handicapped - A Cooperative Approach" which appeared in Rehabilitation Literature (1969) wrote that special education is concerned with the total education of the handicapped person, the development of his cognitive, affective, and psycho-motor skills through adaptive methods and techniques. Vocational education is the "bridge between man and his work" and is a continuous process from early childhood throughout life (p. 200).

Wiesgerber (1978) points out to vocational education teachers working with the handicapped that it is important to be realistic with these students:

> Because vocational education is future oriented, it is important to keep in mind what is practical for the student now and what is likely to be practical for the student in the future. It is important to take a realistic but not pessimistic view. (p. 25)

A number of post-high school options are available to multiple physically handicapped students, such as continuing their education, open employment or a sheltered workshop. Michaux (1970), himself a physically handicapped person, suggests that an effort must be made as the child grows older to seek out and mutually explore plausible vocational opportunities. Schooling is a necessary segment which should have relationships with all other parts of life's total pattern. Urgency is inherent in the early education of physically handicapped youth.

Work habits do not start at age 21, when a handicapped person seeks employment, nor is employment the whole life. There is a need for rehabilitation in the so-called activities of daily living areas (Weisgerber, 1978, p. 28). The physically handicapped student must be involved to the highest degree so that he can derive first-hand knowledge from his activities. In lieu of hands-on activities too much emphasis is based upon communication of second-hand information which is apt to stay in the pupil's mind only until examination time (Harder, 1968, p. 58).

The physically handicapped must be helped to develop appropriate attitudes and habits so that proper post-secondary activities can be planned. A workshop placement, although a possibility, should be toward the bottom of the priority list as a working environment for multiple handicapped individuals. Power (1974) pointed out a number of demeaning factors that are commonly associated with a workshop setting, when he wrote:

> Experience alone testifies to the discrepancy between the types of work found in a workshop setting and in competitive industry. The dull, routine, monotonous type of work seems to be the backbone of the workshop setting. We cannot avoid monotony and routine in work. But does it mean that, because we feel that most of the handicapped can perform only such tasks, the potential for higher type tasks cannot be explored. (p. 68)

Shworles (1976) discusses the perspective that physically disabled persons want to work for the same reasons as nondisabled individuals, and that is to function as adults, to gain financial independence, to develop feelings of competence, and to acquire self-respect. However, the author suggests that vocational education takes on an even more important meaning for many disabled persons when viewed in Olshansky's context.

Olshansky (1974) feels that work is important to the handicapped because it gives "normalness" to their lives. This author believes that:

> The role and goals of work take on added or special meanings, since they often feel challenged and inadequate on the grounds that they are less than adult. Work is more likely to become the central experience of their life. . . . Work represents to the disabled the road to normality. It is expected almost of everyone, except the very young and the very old and the very sick. (p. 23)

Thus emphasis is placed upon exploring all the options including doing a work assessment before the handicapped individual is placed so that the job is compatible to the person being placed.

Prospects for Work

Although employment is not part of this research it is included here since job placement of a student is often a reflection on the educational setting from which that student came. Thus to have a student do well in a job situation means well for the school program and so school and work are closely interrelated.

In a work oriented society that exists in Canada, the obtaining of and retention of gainful employment is a major source of ego gratification. Work and work related activities are necessary for many person's self-esteem that require a significant degree of maturity (Friedman, 1971, p. 6).

However, the main effect of an handicap whether it be physical or mental is that the handicap tends to prolong the infancy of the child (Apley, 1962, p. 197). Friedman (1971) suggests that statistics indicate that those individuals who are handicapped from childhood have a poor prognosis for successful adjustment to work. Often times this prognosis is not the result of a severe physical handicap but is due to the fact that handicapped children are emotionally immature (p. 6). In addition, Rosenberg (1968) says that one of the major obstacles to vocational rehabilitation is the inability of the disabled to assess realistically his potential or determine his limitations.

Many individuals with cerebral palsy, for instance, are highly motivated and want to work but chances for these multiple handicapped people securing employment are very slim.

In 1972, five years after the opening of the Glenrose School Hospital Dr. McPhail, the Executive Director, recommended that sheltered workshops were needed to meet the needs of individuals with cerebral palsy. In his recommendation he stated that the odds are against them of ever being employed. He wrote:

> Sheltered workshops are required. Probably only about 25% of children with cerebral palsy will ever obtain employment. Sheltered workshops can provide pleasurable activity for these handicapped individuals. (p. 27)

"What happens to the child with cerebral palsy once he leaves school? This is of concern not only to teachers but to society as a whole" (Bleck and Nagel, 1975, p. 66). These authors continue by saying that severity of the handicap and the degree of mental retardation affect the chances for employment. In addition, they point out that parental overprotectedness is also a factor in the employment seeking of the cerebral palsied. Commenting on this Bleck et al. wrote that:

> Another factor in obtaining employment and social adjustment to adult life was an overprotected attitude exerted by parents in early life. A more favourable outcome regarding employment was found in those who had attended regular school or at least had the opportunity of eventually attending regular school. Those who had gone to normal schools but failed to obtain work were often emotionally disturbed. (p. 67)

Levitan (1977) discusses competitive employment and sees it as a "distant" and frequently unattainable goal for the disabled with the most severe mental and physical handicaps. Special arrangements are needed if these persons are to work or prepare themselves for entry into the labor market (p. 59).

Michaux (1970) takes the position that employers must be innovative if employment of the handicapped is to become a reality. On this issue he wrote, "I know even more who want to work and could if there was more creative thinking on the part of the potential employer" (p. 88).

Dinnage (1970) believes that a reassessment of employment opportunities will have to be made if society is to maximize its educational and medical dollar for the expenditures that are made in preparing the handicapped to enter the world of work. In discussing this issue this author said:

> a major reassessment of employment possibilities is due. To be useful to the community in some fashion is the basis of self-respect, and without it much medical and educational care may be wasted. (p. 36)

Although work is an essential tool of a democratic society which gives meaning to physical restoration and sociopsychological rehabilitation of the handicapped, nothing is gained by permitting the handicapped teenager to dream about being financially independent when he will never be able to hold a job (Ayault, 1971, p. 171).

It is essential that the teenage student with a handicapped condition be made aware of his capabilities in order to minimize discouragement and failure later in life.

Individuals with physical handicaps, such as those in wheelchairs, must be offered every opportunity for growth mentally, socially and vocationally. It is necessary to go underneath and beyond cosmetic and physical factors such as wheelchairs and spasticity, and reach the inner person (Stark, 1969, p. 230). Employment might not be a possibility for the handicapped student although the auditing of a course in industrial education might prove to be a very positive experience for this learner.

Michaux in The Physically Handicapped and the Community (1970) states that the physically handicapped should obtain as much schooling as possible regardless of employment opportunities. He notes that:

> The main advantage in a handicapped person's receiving a good education when he has the ability is not so much economic as it is having more resources. The more resources and interests we have, the more of an asset we are to ourselves and our communities. (p. 85)

Services for the handicapped have shown a steady growth since the 1940's. Because of private, provincial and federal assistance progress has been made in a number of areas. Increased funding has stimulated more research into the cause and cure of diseases; better methods for detecting and diagnosing disease have been identified; better facilities for treatment have been built; disability allowances have been escalated; special hospitals, schools and legislated accessibility have been put in place.

THE GLENROSE SCHOOL HOSPITAL

The Glenrose School Hospital is part of the Glenrose Hospital, a provincial general hospital which offers health care, education and rehabilitation services to physically handicapped and emotionally disturbed* children who are residents of Alberta or the Northwest Territories. No distinction is made as to religious affiliation of the students who attend this school.

The Glenrose Provincial General Hospital was established as a Convalescent - Rehabilitation Hospital and its Board of Management appointed by O.C. 195/63 (Order in Council) on January 29, 1963, pursuant to Sections three and four of the Provincial General Hospitals Act, being Chapter 64 of the Statutes of Alberta, 1959, as amended 1962 (p. 1).

The By-laws of the Glenrose Provincial General Hospital (hereafter called Glenrose Hospital) were enacted for the operation of an approved general (convalescent - rehabilitation) hospital providing medical care, rehabilitation, and education services for the following types and classifications of patients:

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*Treatment of the emotionally disturbed child at the Glenrose School Hospital is a separate program from the treatment of a physically handicapped child. Because of this it will not be included in this report.

> 1. Convalescent Patients from Active Treatment General Hospitals who are recovering from surgery, injury, or an acute medical condition and can be expected to return to the community after a short period of one to two months of medical and nursing care and rehabilitation service.
> 2. Multiple Handicapped Children whose physical and mental handicaps are amenable to medical treatment and who are educable will be provided with medical treatment and education services on in-patient, out-patient or day care basis.
>   Children who by reason of limited intellectual capacity or severity of handicap, are unable to benefit from the special educational program offered the 5 - 17 year old patient, may continue to receive periodic medical examinations, treatment as indicated, aids and appliances under this program, provided the service is rendered by School Hospital Consultants and staff, and rendered on the Unit. (Glenrose P. G. Hospital, 1977, p. 1)

The Glenrose Provincial General Hospital consists of three main units, namely: the Convalescent Rehabilitation Unit (C.R.U.), the Physically Handicapped Children's Unit (P.H.C.U.), and the Emotionally Disturbed Children's Unit (E.D.C.U.). All of the disciplines (Nursing, Medicine, Occupational Therapy, Physiotherapy, Speech and Audiology, Psychology, Social Work, Education, Recreation) within the Hospital may work with patients from each unit. As a result, the delivery of interdisciplinary care to patients becomes very complex as the organization endeavors to effectively manage the various functions and programs in this facility. Because of this a system needed to be developed that would separate the various programs or functions into manageable units that can facilitate managerial concepts (Valletutti and Christoplos, 1979, p. 34).

The structure used at the Glenrose School Hospital for coordinating the many supporting services which are part of this nursing care system closely approximates the matrix organization described by Johnston and

Fingey (1976). These authors describe their organizational model in this way:

> The term matrix organization is used because of the "grid" or matrix structure that results from the existence of both hierarchial (vertical) coordination through departmentalization and the formal chain of command, and simultaneous lateral (horizontal) coordination across departments. Under a matrix organization the institution is perceived as a collection of teams, coordinated to accomplish a common goal, i.e., effective patient care. Each team is composed of a leader and team members who represent appropriate health, social, and educational disciplines. (p. 41)

Perhaps two aspects of the Glenrose Hospital should be mentioned since both of these aspects were conferred upon the Hospital by parties in the health care field external to the Hospital. Both aspects are very descriptive and influential of present day goal setting and programming for patient care. The first aspect concerns itself with "accreditation" which was granted to the Hospital by the Canadian Council on Hospital Accreditation. The Alberta Government Publicity Bureau (1968) described hospital accreditation granted to the Glenrose in the following quotation:

> The Board of Management of the Glenrose has been striving for a high quality of patient care since the hospital first opened. These efforts were rewarded in the fall of 1967 when the hospital was granted the status of "Full Accreditation" by the Canadian Council on Hospital Accreditation. Accreditation indicates that high quality care from competent staff in a physical setting to protect patients from any hazard is being provided by the Glenrose. (no page number given)

The same publication also described the second aspect which is concerned with the Glenrose Hospital as a teaching hospital and its affiliation with the University of Alberta as an affiliated teaching hospital. The Hospital and School Hospital has and continues to contribute substantially to the training of both professional and para-professional personnel in the various medical disciplines as well as in education. As the content of the following quotation shows:

> The Glenrose, in the short time of three and one half years, has also gained affiliation with the University of Alberta as an Affiliated Teaching Hospital. The Hospital offers to the medical, nursing, physiotherapy, occupational therapy, speech and hearing therapy and education student resources which will make a substantial contribution to this development in chosen professional fields. (no page number given)

HISTORICAL DEVELOPMENT OF EDUCATIONAL SERVICES FOR MULTIPLE PHYSICALLY HANDICAPPED CHILDREN IN NORTHERN ALBERTA

The genesis of the Glenrose School Hospital can be traced to the late forties when a group of parents of cerebral palsied children organized and demanded from the provincial government appropriate services for their children. These developments began in 1947, when Dr. F. Day, a medical practitioner, took up the cause for these children with the parents. In 1950 the Government of Alberta responded by establishing the first Cerebral Palsy Clinic in Edmonton for diagnostic and treatment purposes. Dr. Day was appointed Director of the Clinic.

Funded by the Department of Public Health, the Clinic operated on a minimal budget. Nevertheless, the Clinic was successful in providing medical and educational services. In 1952, the Clinic moved to larger quarters so that the clinical and educational programs could be expanded. In 1963 the planning was started on the Glenrose School Hospital which was quickly followed up in 1964 by a Pilot Project to ascertain the effectiveness of using the multi-disciplinary concept with multiple physically handicapped children.

As a direct result of government efforts, citizen participation, and valuable experiences gained at the Cerebral Palsy Clinic, the $3.5 million Glenrose School Hospital was officially opened September 9, 1966, and medical and educational services at the Clinic were terminated (Briggs, not dated, p. 2).

The next section of this paper will trace the evolvement of the Cerebral Palsy Clinic (1950 - 1966), giving particular emphasis to the development of the educational program.

The Cerebral Palsy Clinic in Edmonton

In 1950 the Alberta government established the province's first Cerebral Palsy Clinic in Edmonton's Kingsway Legion Hall. The purpose of the Clinic was to diagnose and treat cerebral palsy and the initial staff consisted of a director, a secretary and an occupational therapist.

In his first Annual Report (1950) to the Department of Public Health, Dr. F. G. Day, Director of the Clinic, reported on expansion plans and staffing needs when he wrote:

> Plans are well under way to construct a Clinic Building, for which three lots have been purchased at 115th Street and 74th Avenue. The staff will shortly be augmented by a Brace Maker, a Speech Therapist, a Specialized School Teacher and a Physiotherapist. It is planned to duplicate these services in Calgary as soon as the Edmonton Unit is well under control. (p. 50)

However, it seemed that it would take many years and much planning before the Province would catch up to the treatment requirements of the cerebral palsied population, according to statistics quoted by Day (1950):

> After considerable research, it is my estimation that there are very close to 500, if not over 500, cases of cerebral palsy in the Province of Alberta who are under the age of 15, and that approximately two-thirds of these could be very definitely benefitted by treatment. Since we will be able to treat not more than 30 in the Edmonton Clinic, and approximately the same in Calgary at a later date, it would appear that our facilities are very inadequate. (p. 50)

Impetus for Edmonton's Clinic, like clinics in many other North American and European cities, came from various parent and community organizations. Day (1950) described the many ways in which various volunteer associations contributed to the success of the Clinic. He stated that:

> We have been greatly assisted by the Cerebral Palsy Association, who have paid the rent on the existing quarters and maintained a bus to provide transportation, and by the City Firemen who drive the bus. The South Edmonton Kiwanis Club have assisted us in preliminary equipment and expenses, and are raising funds to build a Recreation Building and Playground adjoining the Government Clinic. The Canadian Travellers Association has given financial assistance wherein they purchased the transportation bus and many other clubs, organizations and individuals, too numerous to mention, have offered financial and moral support for the present and the future to allow us to maintain the program and expand the extraneous services as we see fit. (Day, 1950, p. 51)

A year after the Clinic opened, Day (1951) reported that new temporary quarters had been obtained at 10560 - 105 street and that the government clinic building built near 115 street and 74 avenue should be ready early in 1952. Under the subheading of "Staff" a couple of noteworthy "firsts" were described, which included:

> A Speech Therapist, who is both well qualified and well recommended, has just arrived from England. A school teacher, who first qualified as a general teacher and then specialized in teaching handicapped children has been contacted in London, England, and will be available in March 1952. It is interesting to note that in these last three employees there are two "firsts", since they constitute the first therapist, and the first school teacher specializing in handicapped children to be made available in the Province of Alberta. (Day, 1951, p. 52)

In the "Cerebral Palsy Clinics" Report of 1952, Day very optimistically cited the importance of the Clinics (Calgary now had its Clinic) in shaping the lives of cerebral palsy children in Alberta, when he said:

> Alberta's cerebral palsy cases have a new lease on life. Through the clinics which have been established by the Government of Alberta, these crippled children are learning to walk and talk and are learning such use of their hands as will remove many of them from the group which is a family handicap, into the class of self-supporting citizens. (p. 119)

In another paragraph of the report the Director gave the reader a glimpse of the workings of the Clinic. Although Day (1952) did not refer to the Clinic as a multi-discipline setting, it was apparent that he saw the staff, including education, working as a team. He described the work of the physiotherapist, the speech therapist, the occupational therapist, and wrote the following about the teacher:

> A teacher is also part of the team. An attempt is made to keep the child up to other children in ordinary school work. In doing this, she never forgets that the primary function of the Clinic is to re-educate the disabled muscles. (Day, 1951, p. 119)

Surveying the first three years of operation, Day concluded in his Annual Report of 1952 that "already dramatic results had been seen in many cases", especially in children three to six years (p. 120).

In the "School Report" section of the paper, Day (1953) wrote that the aim of the special classroom for cerebral palsied children was to prepare them for, and guide them toward future participation in regular classroom activities. It was also the author's observation that individualized instruction was a must since individual differences were so great that group work did not raise the academic level of students (p. 142).

Looking at the cerebral palsied child from a medical perspective, Day (1953) was of the opinion that no child should be treated unless "expenditures of time and energy (were) worthwhile" (p. 143). He wrote:

> In this disease it is impossible for any one to put down in black and white what progress has been made. We have reached the stage in the Edmonton Cerebral Palsy Clinic where we are not treating any cases where we do not feel we are obtaining sufficient results to make expenditure of time and energy worthwhile. Therefore it is safe to assume that all of the cases which were under treatment during the past year have shown improvement. This, of course, is varied from some cases where we think the improvement has been both remarkable and rather dramatic to those who have just shown sufficient to warrant us continuing on with therapy. (p. 143)

In the 1955 Annual Report Day reported that in addition to a regular teacher, a "roving teacher" was also "provided for ten senior students" (p. 63).

In 1956, the fifth consecutive year of operation of the Cerebral Palsy Clinic services in Alberta, Day stated that the service started by the government "had developed into a comprehensive one of considerable magnitude" (p. 57). This meant that:

> Both Clinics are complete units, providing all the modalities of treatment recognized as being required for the complete therapy in this desease. Diagnostic Clinics are held at weekly intervals and continue to gather new cases and revise treatments in the older patients. Emphasis has continued to be placed on public education and education of those in the field of medicine on the diagnosis and treatment of cerebral palsy. Perhaps, one of the largest services rendered is assistance in the home treatment and assistance in future planning of the large number of cases who do not fall in the category of treatable cases at the Clinics. (Day, 1956, p. 57)

It was also during this year that Day (1956) recorded that a number of children attended school during the summer holidays and that children in a reading readiness program were integrated with non-handicapped children (p. 61).

An important aspect of rehabilitation which Day addressed in the Cerebral Palsy Clinics report of 1958 was the need to look ahead and plan for the post-school years of young adults. Reporting that the emphasis was on the treatment of younger children as well as their education, Day (1958) wrote that:

> We have attempted to spend more time on the rehabilitation of those young adults, who, after benefitting by the governmental program have still found it difficult to find their place in society. We hope, in the not too distant future, that we will have a practical program for job placement functioning with the assistance of the Edmonton Chamber of Commerce. (p. 75)

In September, 1958, a second classroom was opened to facilitate full-day instruction. Alberta school curriculum was used and the instruction was, of necessity, to be individualized as the report for this year indicated:

> Since the opening of the second classroom in September at the Cerebral Palsy Clinic, 10 children were in attendance for varying lengths of time in 1958.
> These children have received a full day of instruction, with time off only for required therapy treatments.
> Studies have been based on the Alberta School Curriculum, as nearly as possible within their capacities, as limited by their various handicaps.
> The pupils attending, being in differing stages of grade groupings, necessitated individual instruction in most cases. (Day, 1958, p. 78)

In the Annual Report of 1959, Day stated that "the treatment of cerebral palsy, a very old disease, is relatively a new science and therefore a rapidly changing one" (p. 91). As a medical facility the Clinic was keeping pace with change as it promoted research and development as integral aspects of the program.

Already certain experiences at the Clinic were showing that "expenditures of time and energy could be worthwhile" (Day, 1953, p. 143), if patients were admitted to the program on the basis of mental ability. The author elaborated:

> It has become increasingly evident that to function economically, treatment facilities should largely be reserved for those children who have the mental ability to be educable. We have, therefore, used the services of the Provincial Guidance Clinics in determining the mental status of all patients prior to admission for treatment in the clinics. (Day, 1959, p. 91)

In the 1960 Annual Report to the Department of Public Health, Day wrote that "after ten years of active functioning it was safe to assume that we have pretty well caught up with the backlog and hence will be on a constantly-rising ratio in the future (p. 97). It was also noted that there were a considerable number of requests for the Clinic to serve as a training centre for medical, para-medical, educational and other personnel. Day (1960) expressed his concern about the development of this situation when he wrote:

> You will note . . . that a very marked increase in the demand for us to enter into the educational program of medical students, nurses, physio and occupational therapists, education personnel, social workers and high school students is taking a great amount of the time of our clinic staffs. We feel that this is a most essential part of the program but it is reaching the stage where it is cutting into our time available for actual treatment. (p. 97)

It was in the 1961 Annual Report that Day mentioned a problem with accommodation and as well hinted at a new project for multiple handicapped children. The author wrote:

> It became most apparent, mainly in Edmonton but in Calgary as well, that we were physically unable with the space facilities and personnel provided to cope with the expanding problem.
>
> Considerable interest has been shown in the new project brought about for the services of multiple handicapped children. It has been anticipated and shown that the cerebral palsied have provided the nucleus along which these centres are developed. We hope that 1962 will bring far more definite accomplishment in this field. (p. 92)

Consequently many changes were made at the Edmonton Clinic which included discussions with the Edmonton Public School Board (E.P.S.B.) for the provision of educational services at the Clinic as this excerpt from the report indicates:

> Discussions with the Edmonton Public School Board, regarding the inclusion of schooling for cerebral palsied children where required, pertained to this service being placed under their jurisdiction. (Day, 1961, p. 92)

The E.P.S.B. became involved in the education of multiple physically handicapped children at the Clinic in March, 1962. However, Day was initially disappointed that not more children could be accommodated but was very satisfied with the Board's educational program as was shown in this paragraph from the 1962 report:

> We had anticipated that the increased schoolroom facilities would accommodate 50 patients, however, with the School Board taking over the educational system and improving it and recognizing the need for more individual care, our schoolroom case load did not enlarge as much as was expected. Consequently we were unable to accommodate as many new patients as was anticipated. We feel, however, that the educational facilities now being provided are outstanding in quality, but once again we find we need a great increase in the size of the physical and personnel set up. It is hoped that this might be provided in the proposed Hospital for Multiple Handicapped Children. (Day, 1962, p. 94)

During 1962 the number of classrooms were doubled from two to four.

At another point in the report, the author once again alludes to the needs of the older student by writing:

> We still have no provision for job placement officers, sheltered workshops and the other essentials for a continuation program after the ages of 16 to 18 years. This situation is becoming more acute yearly as an increasing number of our trainees attain these ages. (Day, 1962, p. 94)

Although the Clinic was plagued with staff shortages in 1963, this did not seem to be the case with educators. The author elaborated that:

> the schoolrooms have enlarged to accommodate more children. We feel that a further increase in the educational facilities, both in Edmonton and Calgary, is necessary for 1964, and we understand that the School Boards are anticipating a staff increase. (Day, 1963, p. 108)

Day (1963) further stated that "the coalescence of the Edmonton Cerebral Palsy Clinic with the Multiple Handicapped Children's Unit at the Glenrose Hospital is presently occurring". The year ended with one portable and four classrooms in use.

In 1964, Dr. G. D. Mores became Director of the Division of Cerebral Palsy Clinics and he began the 1964 Annual Report to the Department of Public Health by emphasizing that:

> Of primary significance in 1964 was the continuing success of

> the convergence in concept and purpose of the Edmonton Cerebral Palsy Clinic and the Glenrose Provincial General Hospital. (p. 115)

The report also explained that the staff of the Cerebral Palsy Clinic became Glenrose Hospital employees on April 1, 1964, and that the reponsibility for the clinical program at the Clinic was transferred to the Glenrose Hospital on May 1, 1964.

Regarding the educational aspect of the program and in preparation for the move to the Glenrose Hospital, the Executive Director wrote:

> We are presently screening the files and having school age children assessed for school readiness by the Provincial Guidance Clinic. It appears that we will have sufficient pupils to warrant an additional teacher.
>
> There was only one member of last year's teaching staff who did not return. Our present teaching staff is dedicated and most co-operative. We are fortunate to have the assistance and co-operation of the Special Services Division of the Edmonton Public School Board and the principal of Belgravia School. (1964, p. 116)

In the 1965 Annual Report of the Division of Cerebral Palsy Clinics to the Department of Public Health, Mores described how the Edmonton Cerebral Palsy Clinic program was to be amalgamated with the more comprehensive program at the Glenrose Provincial General Hospital. The author wrote:

> This will be the last annual report of the Edmonton Cerebral Palsy Clinic as at present constituted. The functions of this clinic have been expanded to include any handicapped child who cannot by other means obtain a suitable education, assuming of course that the child is educable. The physical facilities for patients attending daily will be transferred to the new building at the Glenrose Provincial Hospital in June, 1966, and there should be an active program catering for 120 children by the beginning of September, 1966. (p. 122)

In the following paragraph the author paid tribute to the Clinic staff, including the staff involved with education:

> There is no doubt that the Edmonton Cerebral Palsy Clinic over the past years has been an invaluable asset to the

> community of Northern Alberta. It has provided medical treatment for patients afflicted with cerebral palsy of all ages. Facilities for the education of about 45 children have been available. (Mores, 1965, p. 122)

As late as September, 1965, saw the addition of one portable classroom and the concept of team teaching introduced at lower grades. Looking to the future and the transfer of the program to the School Hospital, Mores in his 1965 Annual Report wrote that clinics would have to be replanned and staff reoriented when the new building at the Glenrose Hospital was occupied. As part of this reorientation and expansion Mores took the position that a more efficient inservice training program would have to be devised for increased numbers of paramedical staff and special teachers as well. The new centre would also have to provide better counselling services for parents (p. 122).

Pilot Project Preliminaries

The proposal for conducting a "Pilot Project" at the Glenrose Hospital was one of the first items of business brought before the Glenrose Hospital Board of Management by the newly formed Advisory Committee for the Multiple Handicapped Program in early 1963.

The purpose of the Pilot Project was to assess the effectiveness of a multi-disciplinary approach to treating multiple physically handicapped children. The multi-discipline approach up to this point in time had not been used at the Glenrose Hospital. However, both medical and non-medical personnel at the Hospital realized that the needs of the multiple handicapped child could best be met through the concerted efforts of all working with the child as a team. From this concept a Pilot Project was initiated which came about six months after renovations on the former Royal Alexandra Hospital started.

Renovations to the Hospital transformed an old, obsolete building into a major rehabilitation centre which was named the Glenrose Provincial General Hospital. The Alberta Government Publicity Bureau (1968) in one of its brochures described the early beginnings of the Pilot Project and school when it wrote:

> On January 4th, 1964, six months after renovations commenced, the first patients were admitted to the Hospital. These were handicapped children and they were admitted to an area on the fourth floor of the Hospital, which became a pilot project for the treatment and education of handicapped youngsters. This area was a self-contained unit providing physiotherapy, occupational therapy, social service, speech and hearing therapy, arts and crafts as well as education and nursing facilities for forty-four youngsters.
> The experience and background gained from this project in determining the care and needs of handicapped children set the pattern for the planning and ultimate construction of the $3,500,000 Glenrose School Hospital, officially opened on September 9th, 1966. (no page numbers given)

Results of this project were positive. At the conference of treatment needs, Briggs (1974) described what the term multi-disciplinary approach meant when he stated:

> Diagnosis, assessment, treatment and care must be concerned not only with the disability, but with the whole child in his total environment. The organization of services must be such that all the parts are linked together, that information passes freely from one to another and that the workers at all levels of specialization function and see each other as equal partners in a combined task. (p. 5)

Since the proposed Glenrose School Hospital was to be modelled upon the Pilot Project, emphasis was placed upon monitoring the progress of the project. The next section of this chapter will examine the development of the Pilot Project from a Glenrose Hospital Board of Management perspective, as was recorded in the Board's Minutes (1963 - 1964).

The Pilot Project

In the early sixties an active treatment hospital for multiple physically handicapped children was being proposed by the provincial Department of Public Health. In anticipation that this facility would be built, a central registry for handicapped children was started at the Glenrose Provincial General Hospital. In 1963 a sample was taken from that population of children who were registered. The children who made up this sample became involved in the Pilot Project, whose major purpose was to assess the effectiveness of using a multi-discipline approach to treating multiple physically handicapped children.

That the Pilot Project served its purpose can be ascertained from the various agenda items that were presented and discussed in the Hospital Board Minutes which were dealt with by members of the Board of Management (hereafter called the Board). Although the Board made the actual decisions, much of the planning for the multi-disciplne facility was done by the Advisory Committee for the Multiple Physically Handicapped Unit. The makeup of this Committee will be discussed in a later section of this chapter.

The site selected for the Pilot Project was the fourth floor of the Hospital. It was anticipated that after suitable alterations and renovations were made to this part of the Hospital that between 30 and 40 multiple physically handicapped children could be admitted as members of the Pilot Project. To provide for the special care of these handicapped students the following specialists staff were employed: physiotherapists (4), occupational therapists (2), aides (4), speech therapists (4), and one social worker (Hospital Board Minutes, June 21, 1963, p. 57).

The Board Minutes of the meeting for June 21, 1963 show that the integration of the Cerebral Palsy Clinic with the Glenrose Hospital was approved. It was felt by the members of the Board that the Hospital could use "the special knowledge" of personnel from the Clinic in planning and renovating (the Hospital) and that they would become the nucleus and eventually the supervisory staff of the Glenrose School Hospital (p. 57).

Initially it was envisaged by the Board that cerebral palsied children be included as part of the Pilot Project that would be conducted on the fourth floor of the Hospital. Because out-patient facilities were not available on the fourth floor and because that floor lacked "enough facilities to handle 40 handicapped patients as well as the cerebral palsies" the Cerebral Palsy Clinic could not be moved until the new wing was completed (p. 70).

This decision by the Board had an influence on the Pilot Project (in the Minutes of the Board the Pilot Project is sometimes referred to as the "Pilot Plan") because the Board decided that between 5 - 10 cerebral palsied children who needed in patient care and unclassified handicapped children be considered for the Pilot Project.

At the July 25, 1963 meeting of the Board a number of significant decisions were made toward the renovations to the fourth floor of the Hospital, staffing and screening and admissions procedures to be used to admit the multiple physically handicapped to the Pilot Project. The following screening and admission procedures were established at that meeting:

> Applications received by the Medical Director would be reviewed and any additional information, tests, etc., would be completed by social service and clerical staff. The application would then be reviewed by a medical assessment team consisting basically of a pediatrician, orthopedist, psychiatrist, with addition of other consultants considered to be necessary. This team would then call in suitable applicants to Edmonton for examination and assessment and reports by an Intake Team consisting of Physiotherapist, Occupational and Speech Therapists, Psychologist and Social Service Workers. A period of in patient assessment may be required.
>
> A panel of consultants including pediatrician, orthopedist, psychiatrist and any other special consultant and an educationalist would then examine the patient and make a decision regarding
>
> 1) admission to hospital school,
> 2) treatment aim and length of stay.
>
> (Glenrose Hospital Board Minutes, 1963, p. 71)

The members of the Hospital Board were most anxious to have in the School Hospital a facility that would be most modern and one that would be efficient and effective. Three representatives of the Board were selected to visit the Ontario Crippled Children's Centre in Toronto where they were to observe the program in operation and to determine which experiences could be of benefit to the proposed School Hospital. Upon their return the Committee made a report to the Board. In part their report said:

> Committee members were greatly impressed by the results being obtained at this (The Ontario Crippled Children's Centre) and other centres in Ontario. There was a generalized shortage of trained therapists at all centres visited. (Glenrose Hospital Board Minutes, 1963, p. 82)

The Minutes of the September 5, 1963 meeting of the Board show that the Advisory Committee made a number of recommendations regarding the accessibility of the educational program to handicapped children. With reference to the number of pre-school children who would be admitted to the Pilot Project the following recommendation was made:

> It was recommended by the Advisory Committee that we admit up to a total of eight pre-school children to the fourth floor pilot project and that the Edmonton Public School Board supply us with a nursery school teacher.
>
> Mr. Golden recommended that the admission of the five year old children be delayed until the summer school routine for the hospital has been established.
>
> The Board approved a motion by Mr. Duggan that recommendations regarding five year olds be finalized when we are completing details for operation of the children's unit on a twelve month basis. (Glenrose Hospital Board Minutes, April 1, 1964, p. 41)

Members of the Medical Advisory Committee were of the opinion that children of school age in the Convalescent Unit have the right to an education. Because of this concern this Committee instructed the Board to refer this matter to the Edmonton Public School Board (Glenrose Hospital Board Minutes, 1963, p. 19).

The Board Minutes for April 11, 1964 indicate that there were a couple of problem areas associated with the Pilot Project that were of concern; among these were: the ratio of students to teachers was too high - 30 to 3; and what was to happen to the students during the summer period. The latter problem caused considerable discussion among the members of the Board on the purpose of this Unit. From this discussion it was agreed among the members of the Board that the Unit was intended to be a Hospital-School and the only children to remain in the Hospital over the summer holidays were those who could not go home (p. 25).

The Pilot Project had now been in operation for four months. One month later, at the May meeting of the Board the Executive Director of the Hospital reported that:

> Education: A second teacher from the R.A.H. (Royal Alexandra Hospital) may be coming to the Glenrose in the fall. It is anticipated that a fulltime teacher may be required for

> convalescent patients, and if so, a classroom will be made available.
>
> Dr. Bradley reported on a letter sent by Dr. Grierson to Mr. Wagner (Edmonton Public School Board) in which he recommended that 5 year olds be admitted to the school program in the Handicapped Unit in the fall of 1964. (Glenrose Hospital Board Minutes, May 13, 1964, p. 29)

One of the purposes which the Pilot Project fulfilled was to give direction to the multi-disciplinary team. However, what remained to be identified was a process which would promote and coordinate the efforts of all disciplines and blend these into a workable and efficient relationship. With no precedent to use as a model it became obvious that the team would have to develop its own paradigm. Briggs (1977) gave an indication of the efforts that were expanded by the various disciplines in the early stages to evolve a team concept, when he wrote:

> nurses, doctors, physios, speech therapists, social workers and educators working and planning together, learning to understand one another's point of view (even picking up a smattering of each other's jargon!) Endless meetings, long discussions, identification of roles and functions, each department busy planning its own program but constantly seeking to fit it into the integrated pattern we knew we had to find. We had virtually no precedents in our own province (or in most of Canada for that matter) though pilot projects had indicated directions. (Briggs & Unrau, 1977, p. 77)

The Involvement of the Edmonton Public School Board

In 1962 the Edmonton Public School Board (E.P.S.B.) was requested by the Department of Public Health to assume the responsibility for providing educational services at the Edmonton Cerebral Palsy Clinic (Department of Public Health Annual Report, 1962, p. 94). The request was made twelve years after the Cerebral Palsy Clinic in Edmonton was established.

However, the Glenrose Hospital Board of Management did not waste any time in securing the services of E.P.S.B. to supply teachers and program for both the Pilot Project and proposed new 100 bed Wing.

In the Hospital Board Minutes for June 26, 1963 the roles of E.P.S.B. in supplying the required teachers was discussed. From that discussion the following motion was made: "That application be made to the Edmonton Public School Board for teachers and education" (Hospital Board Minutes, 1963, p. 57). This motion was seconded and carried.

The Executive Director of the Hospital in a letter to the E.P.S.B. communicated with the School Board the needs of the School Hospital concerning teacher needs as well as educational needs. Dr. Hall's letter was discussed at the July 11, 1963 meeting of the School Board. Minutes for that meeting show:

> Glenrose Provincial General Hospital, July 11, 1963,
> re: Teachers for Glenrose Hospital.
>
> In a letter dated July 11, 1963, Dr. R. M. Hall, Executive Director of the Glenrose Provincial General Hospital, requested the support and co-operation of the Edmonton Public School Board in providing teachers for the Multiple Handicapped Children Education Program to be initiated in the Fall of 1963 at the Hospital. Dr. Bell indicated that the facilities (the former Royal Alexandra Hospital building) are being renovated and reorganized for the admission of convalescent patients. A portion of the building will be used for a preliminary program in providing medical care and education for approximately thirty to forty handicapped children. A 100-bed wing is planned for expansion and continuation of the Multiple Handicapped Children Education Program. The Advisory Committee of the Hospital have recommended that four teachers be employed when the Program commences and that one teacher be provided immediately to assist in renovations and planning of the preliminary program and in the design of the new wing.
>
> In reply to a question by Trustee Jones, the Superintendent explained that if our Board provided the teachers for the Glenrose Hospital we would receive grants for them in the same way as for the Special Class Teachers, i.e. from Foundation Program funds, from the City of Edmonton requisition and a further allowance of $2,500 from the Government for each teacher.
>
> The Deputy Superintendent pointed out that the Hospital would provide the necessary accommodation.

> MOVED BY Trustee Dr. M. E. La Zerte:
> "That, as requested by the Glenrose Provincial General Hospital, the Edmonton Public School Board appoint four teachers to be allocated to the Glenrose Hospital to teach handicapped children under the Multiple Handicapped Children Education Program to be initiated in the Fall of 1963 at the Hospital; and that one of these teachers be provided immediately to assist in renovations and planning of the preliminary program and in the design of the proposed new 100-bed wing." Unanimously carried. (Edmonton Public School Board Minutes, 1963, p. 72)

It is evident from the above quotation that the School Board would appoint four teachers who would become involved in the Pilot Project and that one of these teachers would be a member of the Committee that would plan the School Hospital wing of the Glenrose Hospital. The Advisory Committee on the Multiple Handicapped Children's Unit was found to give advice to the planning of the program for the Unit and is described more fully later in this section.

Paragraph two in the quotation suggests that "special class teacher" positions were subject to a number of grants and allowances, and this was the case. Trustee Jones, concerned about future costs to the Public School Board, was told that financing for new teachers eventually employed in the new wing of the Glenrose Hospital, would come from three sources:

1. The school Foundation Program (Section 129, The School Act (1967) - each municipality contributes monies to the School Foundation Fund according to the rate set by the Alberta Assessment Equalization Board. In turn, the Minister of Education pays to each board and county such sums as are authorized by the regulations. These monies are paid for classroom units (No. of students), transportation, administration and debt retirement. (University of Calgary, 1972, p. 49)

2. Local Supplementary Requisition (Sections 119 & 120, The School Act) - If a board determines that revenues obtained from the School Foundation Fund and further grants (as in 3.) are not sufficient for the operation of its educational

> system, the board may requisition a further amount from the ratepayers in the district. (Ibid., p. 54)
>
> 3. The School Grants Regulations (Alberta Regulation 182/71) - These regulations stipulate which situations warrant extra grant monies. With regard to the E.P.S.B. quotation the regulations point out that additional grants will be paid for each special education teaching position approved by the Minister of Education in which a teacher is employed full-time exclusively for teaching pupils who require special instruction. (Ibid, p. 52)

At the September 19, 1963 meeting of the Hospital Board one of the agenda items that was discussed was correspondence from the Edmonton Public School Board. In discussing that correspondence Mr. Baker reported that because of the shortage of teachers with special education training the School Board would refrain from appointing a teacher to the Pilot Project until patients were on the unit. The School Board indicated it would retain staff for the Glenrose Hospital as part of this district school system.

Approximately three years later, in 1966, a principal and assistant principal were appointed by E.P.S.B. to administer the educational facilities, staff, and program at the Glenrose School Hospital. The Minutes for the April 26, 1966 meeting of the Hospital Board show that the newly appointed Executive Director of the Hospital, Dr. Bradley informed the Board:

> That the E.P.S.B. has informed Administration that Mr. J. Briggs has been appointed Principal of the Glenrose School Hospital, and Mr. H. Unrau as Acting Assistant Principal. (Glenrose Hospital Minutes, 1966, p. 27)

Findings of the Royal Commission: Its Impact on Education of the Handicapped in Alberta

As society in Alberta changed in the last half of the twentieth century so did the educational system change to meet the needs of that changing society. Prior to the 1950's in Alberta education for the atypical child was either minimal or it was non-existent. Historically the turning point in the provisions for special education programs can be traced to the establishment of the Royal Commission on Education in Alberta which was established in 1957 under the Public Enquiries Act and recorded as Order-in-Council 2009/57. The Minister of Education had established an Advisory Committee on Education before 1957 but the Committee found that the problems of education were so complex that they would require extensive and disciplined study. This type of study could be undertaken only by a Commission.

The Commission was established in 1957 and given the official title of the Royal Commission on Education in Alberta. Because the Commission was chaired by the Honorable Senator D. Cameron it was usually referred to as the Cameron Commission. The terms of reference for the Cameron Commission can be found in Appendix C, page 270.

The final report of the Commission was published in 1959 and it included the entire spectrum of education from administration of schools to staffing of the schools. There is one chapter in the report that is devoted to "Special Services", part of which is devoted to the atypical child. The Commission was aware of the fact that Albertans had a different attitude toward atypical children when it said:

> While many of these atypical children are recognized as "different", the general attitude toward them has been somewhat apathetic. It seems frequently to be assumed that the extra-ordinarily bright child can fend for himself, and that the handicapped are simply unfortunate. The result is that the public schools are failing to provide opportunities for the fullest development of high intelligence, on the one hand, and special services for the physically and educationally subnormal, on the other.
>
> A more comprehensive program for atypical children is required as part of the total educational services of the community. (Cameron Report, 1959, p. 225)

As the Commission travelled throughout the province hearing briefs from interested groups or individuals the Commission visited the Cerebral Palsy Clinic in Edmonton and Calgary. On page 226 of its final report the following quotation appears about the reaction of the Commission to these Clinics:

> There are only two of these clinics in Alberta. Both are to be commended for their work. But records of incidence, even though incomplete, show a need for considerable expansion of the services. Children at the clinics may or may not have any mental aberration, and consequently are not to be classified automatically as mentally retarded. Early identification and diagnosis are essential. If the diagnosis is followed by speech therapy, physiotherapy, and instruction under specially qualified teachers, there is a good chance that these handicapped children will become self-supporting citizens. At present, patients attend the clinic for three months at a time. During this period they receive medical and educational services of a special nature. On returning home, however, they may or may not be able to enter a regular school. In either case, the lack of special educational facilities may prevent a successful continuation of their education. (p. 226)

Members of the Commission were aware of the fact that to staff these Clinics with teachers required that the teachers have not only special training but also special attributes. In discussing the training of these teachers and the attributes that were required the report pointed out:

> It is obvious that to teach children with handicaps - mental, physical or emotional - teachers must have special training. Such training is expensive; it is not available in Alberta. Teachers must have a high interest in the field of special education, and possess the requisite temperament. The public may not fully realize the necessity for such special teacher training, but even a cursory examination of the problems involved cannot fail to convince one of this need. (p. 227)

In total the Commission made 280 recommendations that were directed toward education and educational change in Alberta. Among the recommendations made toward education of the handicapped were recommendations 211, 212, and 213. These recommendations in the final report were stated in this way:

> 211. That the provincial government assume responsibility for administration and finances relating to education of the handicapped.
>
> 212. That the Department of Education assume special responsibility for arranging services to handicapped children in sparsely populated rural areas.
>
> 213. That a committee. including educationists, other appropriate specialists and lay members, be established to inquire into the incidence of handicap, the adequacy of the present program, the future requirements of facilities, personnel and finances; and to recommend a suitable program for introduction in Alberta. (p. 227)

The Cameron Report and the Glenrose Hospital Board of Management. The Minutes of the Glenrose Hospital Board of Management for 1963 show that chairman of the Board T. D. Baker[1] made the request that a copy of the report be made available to the Hospital Board. This request was sent to the Minister of Public Health. Dr. Ross took the position that only some parts of the report would be useful to the Board, while the entire report would not be of value to the Board. Another position that was taken by the Minister of Health was "that the School-Hospital program for the Multiple Handicapped Children's Hospital should be coordinated with our hospitalization program" (Glenrose Hospital Minutes, February 21, 1963, p. 12).

DEVELOPMENT OF THE GLENROSE SCHOOL HOSPITAL

The Glenrose Hospital administration submitted to the Board of Management on April 4, 1968, a Final Report: Glenrose School Hospital which indicated that the idea for developing a Multiple Handicapped Children's Hospital was conceived at about the time when the Glenrose

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[1] Mr. Baker was also Deputy Superintendent, Edmonton Public School Board.

Provincial General Hospital was established. The report stated:

> As early as February 1963, the Board of Management in consultation with Dr. J. Donovan Ross was giving consideration to a Multiple Handicapped Children's Hospital which would be operated in conjunction with the major rehabilitation facility to be developed as the Glenrose Provincial General Hospital. (p. 1)

Shortly after this the Board, in consultation with Dr. Ross, Minister of Public Health, established an Advisory Committee for the Multiple Handicapped Program that would provide advice to the planning of the program of the Multiple Handicapped Children's Centre in the Glenrose Provincial Hospital. With the exception of three lay people who were appointed to the Committee, the eight were professional persons who were selected in consultation with the College of Physicians and Surgeons of the province (The Alberta Gazette, 1964, p. 1024).

The foundation for the Glenrose School Hospital was laid on July 25, 1963, when Dr. R. G. Day (Executive Director of the Glenrose Hospital) proposed a motion to the Hospital Board of Management which was seconded and passed. The motion made by Day reflected a recommendation made by the Advisory Committee to the Board, and called for the establishment of a 100 bed wing that would be attached to the Glenrose Hospital. This wing would include both treatment and educational facilities for children who were handicapped. As well two clinics were included. The motion that was made by Day was this:

> MOTION by Dr. F. G. Day, seconded by Dr. G. Monckton and unanimously approved (Dr. Carpendale dissenting) that "The Advisory Committee on Handicapped Children recognizes and approves of the plan for a new 100 bed wing at Glenrose Hospital with treatment and education facilities for Handicapped Children and should also include the Provincial Guidance Clinic and the Cerebral Palsy Clinic - and the Committee assumes and recommends that out patient facilities should be provided for any handicapped child requiring both

> medical care and education (Glenrose Hospital Minutes, 1963, p. 70)

It was approximately one year later, (May 27, 1964) at a meeting of the Board of the Glenrose Hospital that Order-in-Council 655/64 which established the Children's Unit was presented to the Board. This Order-in-Council was the official document from the provincial government which set forth the regulations governing the establishment of the Children's Unit. Appendix C, page 273 includes a copy of O.C. 655/64.

To facilitate better management of the Glenrose Hospital the Board, on the advice of the Medical Advisory Committee, made a motion that the Hospital complex be divided in the following divisions:

> 1) the Multiple Handicapped Children's Unit (P.H.C.U.)
>
> 2) the Convalescent - Rehabilitation Unit (C.R.U.)
>
> 3) the Emotionally Disturbed Children's Unit (E.D.C.U.)
> (Glenrose Hospital Minutes, April 7, 1964, p. 19)

Part of the motion that was made was that a Clinical Director be in charge of each Unit.

With the proposed phasing out of the Cerebral Palsy Clinic, Dr. Bradley, Executive Director of the Glenrose Hospital, had been informed by the Department of Public Health that the following would take place:

> 1. The Department is terminating the Agreement between the Department and the Cerebral Palsy Association effective June 30, 1966.
>
> 2. All items of equipment, furniture, materials, supplies, etc., as part of operating the existing Cerebral Palsy Clinic, will be inventoried as at 31st March, 1966 and transferred, on a sale basis, to the Glenrose Provincial General Hospital for use in the Children's Treatment Centre.
>
> 3. Items of furnishings, equipment, etc., which are a component of the buildings comprising the present Cerebral Palsy Clinic are not to be regarded as included in number 2 above.

> 4. Effective April 1, 1966, the Cerebral Palsy Clinic, Edmonton will be administered and operated by the management of the Glenrose Provincial General Hospital as part of the Children's Treatment Centre, and will become the entire financial responsibility of the Hospital.
>
> 5. The Department will continue to make the physical facilities of the Cerebral Palsy Clinic, Edmonton available to the Glenrose Hospital to carry on the operation of the services until June 30, 1966. (Glenrose Hospital Minutes, January 27, 1964, p. 8-9)

In a letter dated December 23, 1965, Dr. Bradley, Executive Director, advised Dr. Ross, Minister of Health, on a number of items including closing of the Cerebral Palsy Clinic, inventory transfer, staff transfer, and naming of the new childrens pavilion. Enlarging upon the naming of the pavilion Dr. Bradley Wrote:

> Dr. Martin (Clinical Director - PHCU) and I expressed our opposition to "labeling" handicapped children and indicating such in the name of a hospital or pavilion. Our aim in the treatment of these children is to make them feel as normal as possible and it was expressed that the use of such titles as "Multiple Handicapped Children's Unit" negates this. The title as quoted is an awful mouthful.
>
> It is suggested that the name Multiple Handicapped Children's Unit be used for statutory and administrative purposes and that it be agreed that there be two treatment service divisions: the PHCU and EDCU.
>
> May it be agreed that the Board of Management of the Glenrose will determine the name of the Unit? It is felt that we should talk about a School Hospital, or a Children's Centre. The name prefix is not too important at this time; however, we are suggesting to the Board that the name be the Glenrose School Hospital. (Underlined in the original)

Parent associations which played a very important part in the establishment of the Cerebral Palsy Clinic were included as part of the agenda of the February 24, 1966 meeting of the Board of the Glenrose Hospital. The Minutes for that meeting show that the Director of the Hospital had invited the members of the Cerebral Palsy Association to use the new auditorium:

> The matter of parents associations operating in the new Centre was raised. Administration has requested the Director of the Social Service Department to report on the sociological implications of organizing parents groups in the Children's Centre, and to make definite recommendations.
>
> The Chairman mentioned that the Glenrose has a Women's Auxiliary, and this would seem to be the logical group for this kind of work.
>
> Dr. Bradley reported that he has invited the Cerebral Palsy Association to hold a meeting in the Glenrose on the third Tuesday in April and it is hoped that the meeting will be held in the new Auditorium. (Glenrose Hospital Minutes, 1966, p. 17)

The Glenrose School Hospital was officially opened on Friday, September 9, 1966, by the Honorable Dr. J. Donovan Ross, Minister of Public Health, Thirteen days later Dr. Bradley reported to the Board that the in-patient and out-patient programs in the School Hospital were now fully operational (p. 67).

Philosophy of the School Hospital

The purpose of the Glenrose School Hospital was to treat, assess, educate and rehabilitate children with physical disabilities, emotional disturbances, learning disabilities and developmental delays. In support of this purpose the philosophy of the professional staff is that the child functions best in his own community and that the child should be returned to that community as quickly as possible.

This objective is subscribed to by most rehabilitation workers in the Western world and supported by Briggs (1980) who found this to be true in his comparative study of 20 treatment centres. In addition, Briggs listed a number of other objectives in the summation of the study. These were:

> the fostering of maximum physical independence and self-reliance in the children, development of social skills, training in hobby interests and handicrafts and the encouragement of aesthetic interests such as literature, art and music. (Briggs, p. 221)

This philosophy is reinforced by the fact that when one examines the Glenrose Hospital By-laws, which also apply to the Hospital School, it is inferred that staff are given every opportunity to promote new concepts and to experiment with innovative ideas. Under Article VI of the By-laws (1977) entitled "Hospital Rules" the following is written:

> The efficient operation of the Hospital requires that the organization adapt itself quickly to changing concepts that facilitate the provision of better and safer patient care, under the most acceptable conditions. (p. 15)
>
> The Glenrose Provincial General Hospital has, therefore, avoided rigidity by having a minimum of Rules and Regulations and by operating under a system of written policies that can be amended to meet changing conditions and that are available to all members of the staff at all times. (p. 15)

The Glenrose School Hospital provides a multi-disciplinary approach to the treatment, education and rehabilitation of multiple physically handicapped children who range in age from three and one half to eighteen years of age. A number of disciplines provide services to these children and they include: social services, recreation, psychology, speech and audiology, physiotherapy, occupational therapy, medicine, nursing and education (Briggs, 1975, p. 1). These services are not listed in rank order.

The Multi-disciplinary Approach

Comprehensive care is needed by many individuals who have physical handicaps such as birth defects or accident related injuries which will require long term chronic care. Comprehensive care can only be provided by a number of professional disciplines working together and this is essential since often physically handicapped persons have secondary impairments which present a greater problem than the initial disability. These subtle impairments may be psychosocial or educational in nature and are "just as important in rehabilitation as managing the apparent physical disability" (Vallettutti and Christoplos, 1979, p. 23).

To have the patient achieve his fullest potential these authors show the need for an inter-disciplinary team effort by writing that:

> Secondary impairments may be more handicapping to the patient than the primary disability. To ensure that all impairments are recognized and dealt with adequately, a system of inter-disciplinary care is necessary. The disabled individual needs a coordinated array of medical, social, educational, and vocational services, provided in a setting that stimulates the patient's growth as a person. Administrators must provide the necessary structure to ensure coordination and communication of these services for each individual. (p. 23)

The multi-disciplinary approach used in working with children that are multiple physically handicapped has its foundation on the rehabilitation of the child. There is excellent communication and cooperation among personnel from the various disciplines because the benefits to the child are the major concern and are given first priority. Although each department operates within its own sphere of competence, members of that department nevertheless work in close cooperation with members from other departments. The child is the central concern. In a report published by the World Health Organization (1967), the following statement appears:

> Throughout the discussions repeated mention was made of the importance of inter-disciplinary cooperation based on that mutual understanding and respect which help each worker to realize that his colleague's work is as important as his

> own. . . . ultimately the best way of learning to work together. (Quoted in Briggs, no date, p. 10)

It was during the early stages of the Pilot Project that it became evident to the administration of the Glenrose Hospital that the concept of a multi-disciplinary approach for educating and treating children in a hospital setting had great potential. Since then this concept has been actively promoted at the Hospital and is in place today. This concept is built on the foundation that personnel from each discipline will freely communicate and cooperate with each other with the welfare of the child paramount.

Briggs (1977) indicated some of the dynamics that were involved in early 1966 in forming the multi-discipline concept when he wrote that it was purposed to foster:

> an attitude of respect for each other's field of competence, a willingness to share information freely, creating a climate that still characterizes Glenrose. What helped to build this unity of purpose was the early realization that the needs of the individual child must always be the over-riding factor in all decision-making. There were disagreements of course, but never lack of mutual respect; there were mistakes made and misunderstandings occurred but never a lack of a sense of humor and always a willingness to settle differences quickly and amicably with no recriminations. (Briggs & Unrau, 1977, p. 77-78)

The multi-disciplinary approach is predicated on the team concept where representatives from the nine disciplines involved in treating or educating children at the School Hospital work together. The main focus of this approach is to provide direction and stability to both of these programs for the benefit of the child. Major discussions on policy and treatment plans for the student are made by these team members at Case Conferences. Using this approach it is essential that good communication patterns exist between all members of the team because close and continuous communication is a prerequisite to productive rehabilitation. To facilitate orderly management of a student's treatment and/or educational program a number of committees exist in order to promote easy communication among the various disciplines. Two of the committees which have one or more representatives from education are the Case Conference Committee and the Inter-Department Conference Committee. Representatives from the nine disciplines who serve on the Case Conference Committee meet at the call of the chair or Clinical Director who is a medical doctor. For instance, meetings of this Committee may be called to discuss admittance of prospective patients to the program or to discharge a patient who is no longer benefitting from the program; to discuss and examine problems related to a child and which discussions might be of benefit to a number of departments. Meetings of this particular Committee can also be initiated by a member from one of the nine departments.

The Inter-Departmental Conference Committee (I.D.M.) is presided over by a chairperson elected from among the Committee members. The meetings of the Committee allow more time for discussing special problems, long-range goals, parental concerns, than is permitted at Case Conference Committee meetings. This Committee does not meet on a regular basis. It meets more often earlier in the school year to discuss student programs and again later in the year to examine discharges of students.

Admission Criteria

The frame of reference for admitting a multiple handicapped child to the School Hospital includes the following criteria:

1. Age of child between 4½ and 18 years.
2. Residence in Alberta or Northwest Territories.

> 3. Demonstrated necessity for intensive treatment by at least two disciplines, one of which may be education.
>
> 4. Intellectual potential above the level of the educable mentally retarded. The over-riding aim of treatment in every case is to be "rehabilitation" which is taken to mean the return of the child to his own home community and school, able to function adequately in these environments. (Briggs, 1974, p. 12)

Although these criteria are still in force a number of changes have taken place necessitating a shift in the educational program.

The Glenrose School Hospital since 1966 has endeavored to meet the needs of Albertans by building a high degree of flexibility into its program. This flexibility has allowed the institution to adapt to changing community needs in a positive and quick manner. When the School Hospital first opened, the physically handicapped students possessed excellent academic skills. Since that time student's academic abilities have deteriorated and their physical handicaps have become more severe with the result that many of the junior and senior high school students have lower academic abilities.

Intervention programs now in place are identifying "at risk" children at a younger age and in response to this need the number of pre-school and kindergarten programs have been increased.

Thirdly, a more lenient attitude has been adopted toward mentally handicapped children who are in need of medical care. Admittance of these children has necessitated the operation of a special classroom.

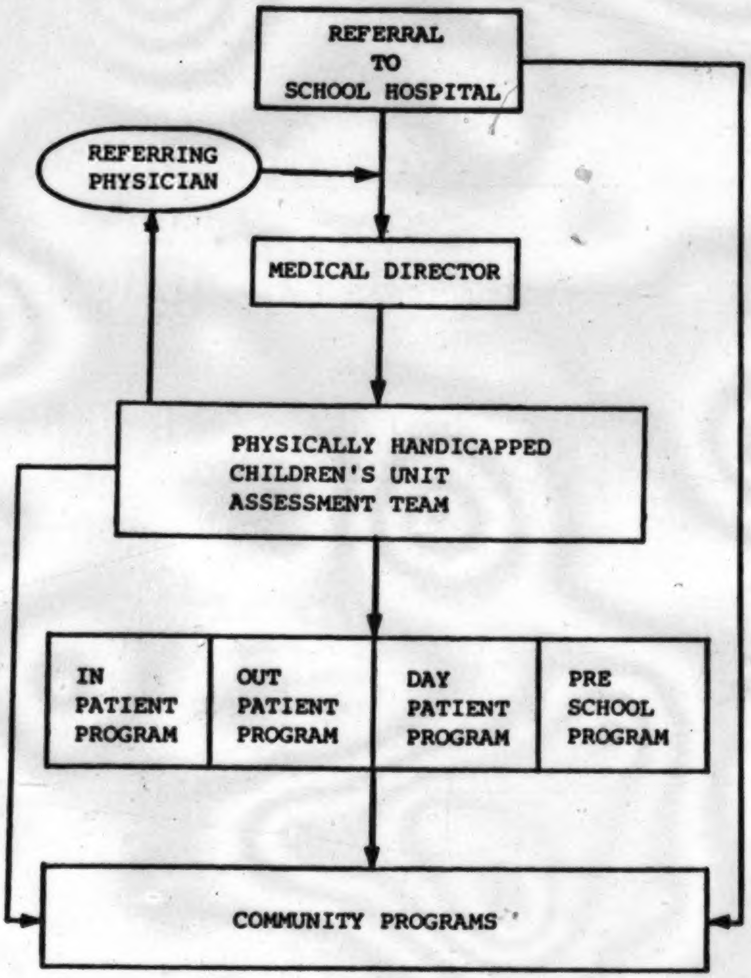
These factors are causing the admission criteria to change in response to newly identified community needs.

Parents, with the support of a physician or psychiatrist, must make the request that their child be admitted to the Glenrose School Hospital. The admitting procedure is illustrated in Figure 4. Prior to being

FIGURE 4

THE ADMITTING PROCEDURE FOR

GLENROSE SCHOOL HOSPITAL


REFERRAL TO SCHOOL HOSPITAL
REFERRING PHYSICIAN
MEDICAL DIRECTOR
PHYSICALLY HANDICAPPED CHILDREN'S UNIT ASSESSMENT TEAM
IN PATIENT PROGRAM
OUT PATIENT PROGRAM
DAY PATIENT PROGRAM
PRE SCHOOL PROGRAM
COMMUNITY PROGRAMS

admitted to the School Hospital a thorough hospital assessment of the child is carried out which can involve either a single department or all nine departments. In a brochure entitled Glenrose School Hospital and under the heading "How is a child assessed for the Physically Handicapped Children's Program?" the following information on assessment is found:

> A letter of referral from a physician is required. Routine investigation should be carried out by the referring physician prior to referral. Further information may be requested by the Clinical Director before an appointment is scheduled with the assessment team.
>
> Depending on the problem present the assessment team may be composed of a nurse, physiotherapist, occupational therapist, speech pathologist, audiologist, psychologist, social worker, educationalist, urologist, etc. A day and a half is required for the assessment necessitating the presence of the child and the parents at the School Hospital.
>
> As a result of the assessment the recommendation may be:
> 1) Admit as inpatient.
> 2) Attend as day patient for education and therapy
> 3) Attend for half day pre-school program.
> 4) Attend for outpatient service (home program).
> 5) Refer to another resource. (No page number given)

The assessment process determines whether a child will be admitted or not admitted to the Glenrose School Hospital as a patient. Each discipline in the hospital is responsible to do an assessment on the prospective patient. Educational assessment procedures will be discussed more fully in a subsequent section of this chapter.

In summating the responses on "Assessment Routines" from 20 different treatment centres for the physically handicapped (including Glenrose School Hospital), Briggs (1980) found that:

> Almost all assessment procedures involved examination and reporting by the treating disciplines. The decision with respect to admission was essentially a team decision in most cases. In one instance only the assessment was carried out by an outside agency. (p. 202)

In addition Briggs indicated that the time needed for the actual assessment varied from one to two days although some centres took a week or longer.

Children are admitted to the Glenrose School Hospital either as day patients or outpatients, a status generally determined by the amount of nursing care required by the child. While the child is attending the school the progress of the child is continually monitored through interdisciplinary conferencing to determine if the program selected is effective. Following discharge from the School Hospital, follow-up of the child is provided through clinics, therapy and periodic reviews. Some of the clinics that are held at the Glenrose School Hospital for children who are inpatients or outpatients include the:

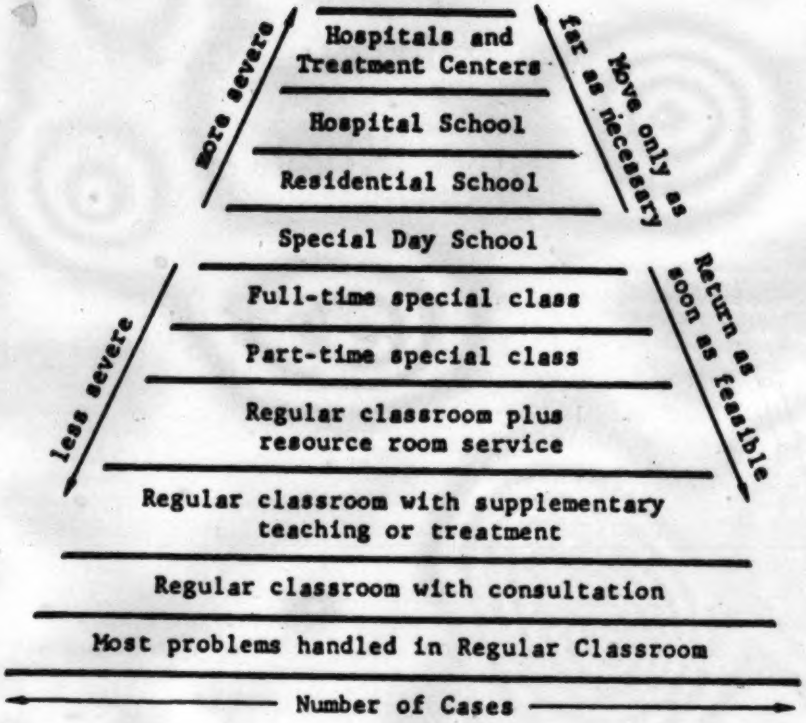
1. Assessment Clinic
2. Neo-natal Clinic
3. Convulsive Disorder Clinic
4. Orthopedic Clinic
5. Juvenile Amputee Clinic
6. Physical Medicine Clinic
7. Milwaukee Brace Clinic
8. Connective Tissue Clinic
9. Neuromuscular Clinic
10. Meningomyelocele Clinic
11. Mini-assessment Clinic
12. EDCU Assessment Clinic
13. Seating Clinic
14. Brace Review Clinic

In discussing the hierarchy of various programs available for special education purposes, Reynolds (1962) indicates that the higher levels of programs are not as educationally oriented as the lower levels (see Figure 5). This author suggests that primary emphasis at the higher levels is on treatment, protection, and care. Thus "Hospital School" and

FIGURE 5

HIERARCHY OF

SPECIAL EDUCATION PROGRAMS


Hospitals and Treatment Centers
Hospital School
Residential School
Special Day School
Full-time special class
Part-time special class
Regular classroom plus resource room service
Regular classroom with supplementary teaching or treatment
Regular classroom with consultation
Most problems handled in Regular Classroom
Number of Cases
more severe
less severe
Move only as far as necessary
Return as soon as feasible

SOURCE: Reynolds, M. C. A framework for considering some issues in special education. Exceptional Children, 1962, 28, March, pp. 367 - 370.

"Hospitals and Treatment Centres" provide educational services which may have importance but usually referral to such institutions is based upon factors other than educational need. Overall program control is usually not in the hands of educators (p. 351). This is certainly the case at the Glenrose School Hospital which is based on a medical model. Figure 6 shows the departments which are involved with treatment of physically handicapped individuals and also the extent of the programs offered by the Glenrose School Hospital.

THE EDUCATION DEPARTMENT

The Education Department is one of the nine disciplines that function and provide services within the School Hospital. This Department provides educational services to learners in the school through teachers who are contracted by the Hospital from the Edmonton Public School Board (E.P.S.B.). The teachers in this setting are considered as special education teachers. The Director of Special Education, E.P.S.B., is responsible for these teachers and the program that they offer.

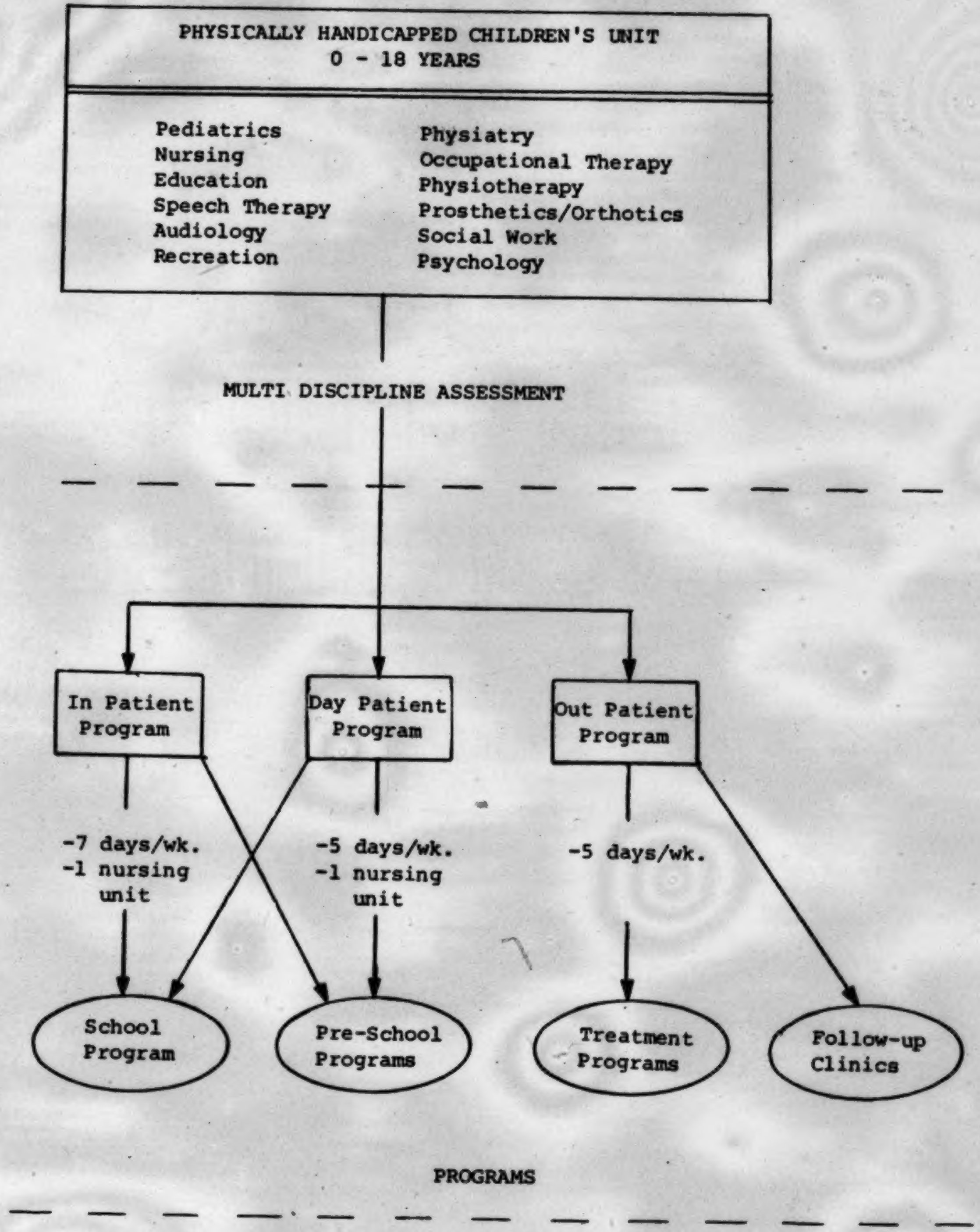
The Education Department staff at the Glenrose School Hospital, who are primarily in contact with physically handicapped children, consists of 34 persons who are assigned in the following manner: mathematics and science (1 teacher), language arts and social studies (1 teacher), business education and law (1 teacher), music (1 teacher), art (1 teacher), home economics and perspectives for living (1 teacher), industrial education and drama (1 teacher), convalescent classrooms (3 teachers), physical education (1 teacher), elementary classrooms (10 teachers), readiness classrooms (2 teachers), and kindergarten (4 teachers and 1 teacher aide).

Other educational services that are provided include: counselling

FIGURE 6

STUDENT ASSESSMENT AND EDUCATIONAL PROGRAMS

AVAILABLE TO PATIENTS - GLENROSE SCHOOL HOSPITAL


PHYSICALLY HANDICAPPED CHILDREN'S UNIT
0 - 18 YEARS
Pediatrics
Nursing
Education
Speech Therapy
Audiology
Recreation
Physiatry
Occupational Therapy
Physiotherapy
Prosthetics/Orthotics
Social Work
Psychology
MULTI DISCIPLINE ASSESSMENT
In Patient Program
Day Patient Program
Out Patient Program
-7 days/wk.
-1 nursing unit
-5 days/wk.
-1 nursing unit
-5 days/wk.
School Program
Pre-School Programs
Treatment Programs
Follow-up Clinics
PROGRAMS

and assessment (2 teachers), library (1 teacher), behavior modification (1 teacher), school liaison (1 teacher), and one teacher aide. Two administrators and three secretaries complement the educational team.

In addition, 8 teachers who work on the Edmotionally Disturbed Children's Unit (EDCU) and 4 teachers who work at the Royal Alexandra Hospital also come under the direction of the Glenrose School Hospital Education Department.

Like all the other departments in the Hospital, the Education Department participates in and contributes to the assessment of prospective students. Clinical observation and testing of these children is carried out by two specially trained teachers. "The assessors try to establish the child's functioning level in terms of grade level in the various academic areas which will serve as a guide in initial program planning and indicate any necessity for specific remedial measures." (Handbook, 1974, p. 43)

The basis for assessment is the fact that for instructional programming to be successful with children who have learning problems as well as multiple physical handicaps, a thorough appraisal of each child's specific strengths and weaknesses needs to be made (Wallace and Kauffman, 1978, p. 3). At the School Hospital this also means that prior to assessing the prospective student, the two assessors research relevant background information from the home and home school.

On the days of assessment the education assessors see children whose ages range from 3 3/4 to 18 years of age. Pre-school skills are assessed using standardized tests such as the Coop Pre-School Inventory and non-standardized tests. School age children are given a brief screening in reading, mathematics, and spelling to determine grade levels. Recommendations are then made at the assessment conference regarding future placements.

Classroom Programming

Children with either a physical or mental handicap treat school as normal children do: that is, they have the desire to learn. However, the severity of their physical disability, and, in some cases, mental disability, are often times limiting factors to their progress in school. The Education Department attempts to help each student gain a measure of independence through successful educational experiences, despite the severity of the student's handicap. This approach with these students has implication for teaching and providing a learning climate which includes among others: small class size; individualized programming; flexible environments and resources (typewriters, etc.); and constant monitoring of student progress.

To approximate as closely as possible a normal school environment students at the School Hospital are grouped by grade level. However, the impact of the severity of the handicap of many of the junior and senior high school students on their educational activities has caused this type of grouping to evolve into non-graded classes. Based upon social maturity and learning potential three levels presently represent the junior and senior high school years. Level I loosely approximates the first two years of junior high school, Level II the middle grades, and Level III the senior grades. Ungraded classes also allow for the promotion of students by age level and psycho-social needs instead of by achievement level. Students move from classroom to classroom in groups, and according to their timetables. An example of a student's timetable is shown in Figure 7.

Commenting on the educational program at the School Hospital, Briggs, (1975) pointed out a number of important aspects of the program when he wrote:

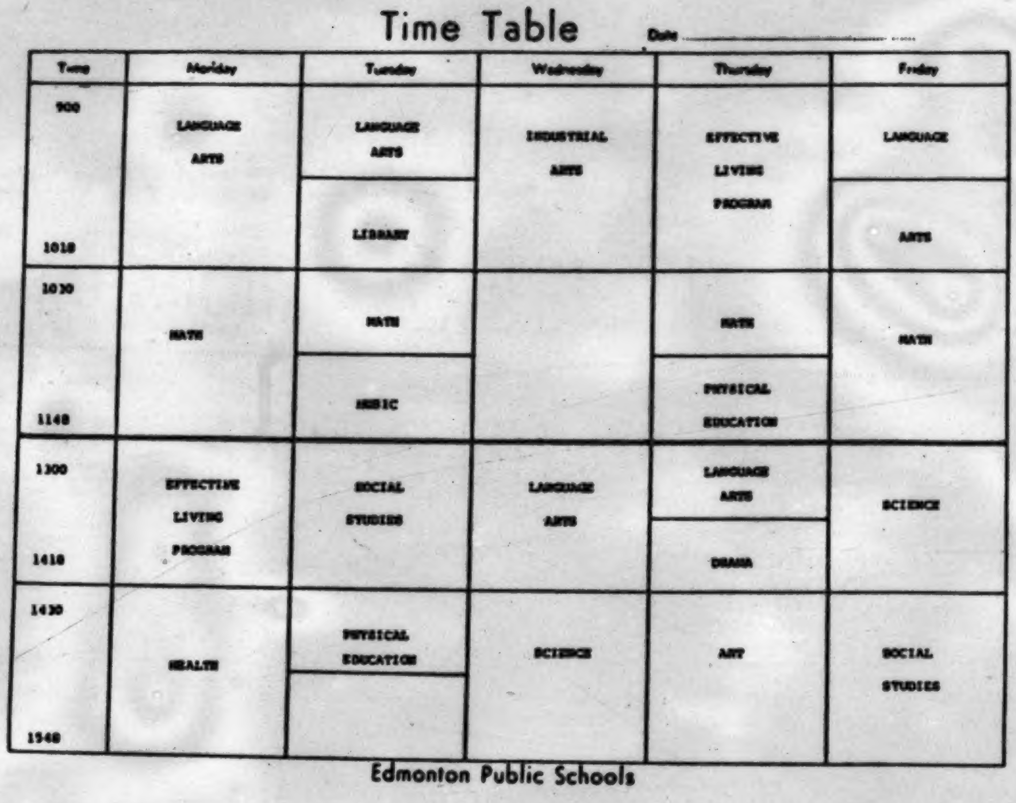
> An educational program is required for every student and individualized attention must be ensured by keeping pupil - teacher ratios very low and providing whatever special materials, special equipment, special curricula, etc. may be necessary. In addition, the educational program must be fitted in with the schedule required for any treatments the student needs from other disciplines however light or heavy such schedules are.
> . . . more than usual individualized instruction must be provided and teachers must be flexible, innovative, and creative in seeking the most effective instructional procedures. (p. 13)

Because marked individual differences exists among these students, provision for individualization of instruction must be made available. For instance, in a class of six students, four different levels of instruction could be present. Small class sizes of from five to eight physically handicapped students in a class provide the teacher with the opportunity to individualize programs and closely monitor a student's progress.

Heilman (1977) suggests that there are significant individual differences in the way children learn that teachers should use varied approaches for helping children who are failing to learn. Consequently there is no one best teaching method for children with learning problems. It becomes a matter of finding what works with a particular child and using it to advantage. In fact, Heilman adds a discerning note by stating

FIGURE 7

A SAMPLE STUDENT TIME TABLE



Time Table Date

Time	Monday	Tuesday	Wednesday	Thursday	Friday
900 1010	LANGUAGE ARTS	LANGUAGE ARTS LIBRARY	INDUSTRIAL ARTS	EFFECTIVE LIVING PROGRAM	LANGUAGE ARTS
1030 1140	MATH	MATH MUSIC		MATH PHYSICAL EDUCATION	MATH
1300 1410	EFFECTIVE LIVING PROGRAM	SOCIAL STUDIES	LANGUAGE ARTS	LANGUAGE ARTS DRAMA	SCIENCE
1430 1540	HEALTH	PHYSICAL EDUCATION	SCIENCE	ART	SOCIAL STUDIES

Edmonton Public Schools

that "the lack of flexibility in teaching approaches is a source of learning problems in some children" (p. 52). Enlarging upon the concept of flexibility Wallace et al. (1979) wrote:

> One of the challenges of teaching is adjusting to individual differences among normal children. Even more challenging are the differences presented by children experiencing difficulties in school. Probably the most complex problem confronting the teacher is that of adjusting instruction to individual differences. The ability to adjust instruction requires teachers to have a working knowledge of a wide variety of instructional materials and techniques.
>
> It is difficult for some teachers to use more than one teaching method. It is equally difficult to convince some teachers of the merits of a specific approach for a particular child if the teacher is already convinced of the "advantages" of using a certain material with all children. Nevertheless, we have found that learning is most often enhanced, and the teaching process is less frustrating, when the teacher is flexible in his approach to instruction. (p. 67)

However, to individualize instruction requires that good materials designed for use with handicapped children be available. Wallace et al. (1979) suggests that there are good materials available for normal children but not to special educators. Provision of good materials will allow teachers to spend more time in other areas. On this issue these authors said:

> Specialized approaches and materials uniquely designed for handicapped children serve a very useful purpose in education. They provide the teacher with precise tools to help in remediating academic problems. Using material that is matched to specific difficulties lets the teacher spend more time on other aspects of remediation. (p. 70)

Special Facilities and Equipment

Special facilities that are well equipped and which permit the student to experience a latitude of educational activities have been made available to multiple physically handicapped students at the Glenrose School Hospital. One of these facilities is the industrial arts laboratory, which will be described in detail in a subsequent section.

The school library has in its stacks over 11,000 reference and general reading books; the science laboratory consists of a number of accessible islands where experiments can be performed; the home economics laboratory is equipped with adapted sewing machines as well as two kitchens. In addition to the regular and modified kitchens the laboratory also contains a laundry area and simulated dining room. A special art room allows for various projects in art while music is taught in a special amphitheatre. In addition, portable television sets, video tape recorders, computers and other audio-visual equipment is available to augment the teaching/learning process. Students also have the opportunity to enrich their learning by means of field trips arranged for them with the aid of a special wheelchair bus.

Providing for an education to multiple handicapped children is a challenge to the teachers who teach in this facility because the learners may miss much of their instructional time due to illness or treatment regimes. These students are not in direct contact with common daily happenings because they live or spend much of their time in the sheltered environment of the Hospital. Some of these students may have perceptual difficulties that result from their handicapping condition; or they may have trouble benefitting from teaching methodologies that have not been designed for use with learners who are physically handicapped.

Teachers in this educational milieu have found that in order to teach these learners they must modify the content of their courses, adapt equipment to meet the needs of the learner, and have both some medical orientation and medical knowledge toward the handicaps that the learner might have. In addition, these teachers must be willing to be experimenters and innovators. Yet the climate in the classroom and laboratories must project normalcy in order to promote integration of students entering the Hospital as well as for those students who are being discharged and returning to their home community. For example, lateness to class is not tolerated because if it is permitted these students may acquire habits and attitudes that are unacceptable in the home school. The Education Department Handbook (1974) of the School Hospital is emphatic on this issue:

> Our aim is to return these youngsters to a regular school as soon as possible and we should not allow them to fall into habits which would be unacceptable or cause difficulty in such a school. Too much pampering is not good for these children . . . . (p. 74)

To maintain articulation with regular schools so that students can transfer back without undue interruption of learning it is necessary that the same curriculum be used in both schools. As an accredited school of the Province of Alberta the Glenrose School Hospital must follow the curriculum as prescribed by Alberta Education.

Alberta Education curriculum guides for the various subjects areas are used to identify the instructional content to be taught but these guides give little prescription on how the content is to be presented to the learner. Textbooks used to support instruction must therefore be chosen carefully by the teacher on the basis of students needs and characteristics. However, for convalescing students every effort is made to have them continue their education through home - school programs, even during an extended stay at the Hospital.

Communicating with Parents or Guardians

It is very important that the lines of communication between the home and the school be effectively used. Many of the children's therapeutic and educational programs at the School Hospital require that parents reinforce routines and concepts with additional practice on a consistent basis.

Since the child is under the treatment of a multi-discipline team, contact with the family does not only become more urgent but it must be coordinated. The extent to which the School Hospital promotes communication with parents was included by the principal of the School when he wrote:

> Special efforts are made to maintain close contact with parents, many of whom reside a distance from Edmonton. In some cases children are placed in boarding homes while attending classes and therapies at Glenrose.
>
> 1. When a youngster is admitted to the program, a contact person is named who is charged with the responsibility of keeping the parent informed about treatment programs and progress.
>
> 2. Parents are routinely invited to attend interdepartmental planning meetings.
>
> 3. Parent-teacher interviews augment the first student report card in November. Student report cards are also issued in March and June.
>
> 4. Parents of children admitted to the Emotionally Disturbed Children's Unit are expected to regularly spend time on the Unit.
>
> 5. A Parent Newsletter is published regularly to keep parents informed of events and activities.
>
> 6. Numerous events, ranging from room parties to Awards Day and Appreciation Day programs, as well as, the Annual Spring Tea, provide opportunities for parents to view their children's programs and meet the teachers and therapists. (1982, pages not numbered)

At the end of the normal school year all students are automatically discharged from the Glenrose School Hospital. Information on the report card may recommend one of three types of placements for the student during the subsequent school year: return to the School Hospital, or return to the home community school, or a special class placement.

Privileged Information

It is paramount that confidentiality of personal information found in the files of students be maintained, particularly because these files that are maintained at the School Hospital contain information that is collected and recorded by all departments. Two examples of files are the master file maintained by the Hospital administration and into which reports generated by all departments are filed and the education or cumulative file maintained by the Education Department which generally contains school generated information plus summaries of other reports.

Information in these files include detailed and complete family and medical histories and any other information which may be of use in treating the child. Consequently it is important that adequate precautions be exercized to maintain confidentiality of these files. Article VI of the By-laws (1977) of the Glenrose Provincial General Hospital state that:

> Medical records and information regarding patients shall be considered as privileged and confidential by all members of the staff. Such records may be used only by members of the staff involved in the treatment of the patient for whom they are produced, for providing information for persons authorized by the Alberta Hospitals Act, for producing accounting records required by the Hospital, for obtaining information for statistical studies and research projects. (p. 20 - 21)

It is understandable that these files might contain a considerable amount of information on a particular student and his family when one considers the length of stay at the Hospital. For a number of the students this stay can range up to fifteen years. Teachers are responsible for entering grades, brief character statements about the students, achievement test results, and any other comments considered to be helpful to other members of the department and/or the team. Files are available to students and/or their parents for their perusal.

Over-age Physically Handicapped Students

Correspondence from the Edmonton Cerebral Palsy Association was one of the items on the Board's Agenda of April 27, 1967. The Association requested that the Board raise the maximum age for admittance to the Glenrose School Hospital. However, the Medical Advisory Committee of the Hospital was of the opinion that other educational facilities existed for handicapped students 18 years and over. It was also felt that they would require much training or instruction in the line of vocational education, and in addition, this was an "extremely inopportune" time to change the age limit on the grounds of:

> i) physical facilities
> ii) problem of having such a wide age spread
> iii) there are other ways of obtaining education should this be necessary. (Glenrose Hospital Minutes, 1967, p. 29)

The Board supported the recommendation made by the Advisory Committee and indicated this by letter to the Association. The Minutes also record that:

> the Board realizes that a problem exists in the area of the over 18 handicapped child and supports the concept that a facility will be required in years to come . . . . and that this matter will be brought to the attention of the Minister of Health and the Minister of Education by the Board. (p. 29)

However, at the Board meeting of May 25, 1967, correspondence was once again entered into the Minutes stating that the Edmonton Cerebral Palsy Association could not accept the reasons given by the Board for not raising the age level. The letter further stated that "there is a need now for facilities to be provided for the continuing education of the over 18 handicapped child" (p. 43). Since an internal Hospital report was being prepared by the Social Services Department, the matter was tabled.

After the Executive Director consulted and communicated with various community agencies including the Public School Board about the education of "over-age handicapped adults" the following recommendation was accepted:

> (I) On the basis that an adequate educational facility has been provided in the Glenrose School Hospital for handicapped persons, and that the facility is not being used to near capacity, and
>
> (II) That the Edmonton Public School Board has requested that educable students aged 18 - 21 years who may be considered capable of attaining a High School Diploma be educated at the Glenrose School Hospital.
>
> (III) And that the Edmonton Public School Board will co-ordinate a continuing study of the needs for education of this age group and make recommendations.
> (Glenrose Hospital Minutes, September 21, 1967, p. 57)

The Hospital Board authorized the School Board to conduct the project as it saw fit and gave the Board full use of the Glenrose School Hospital facilities as well as access to other Hospital resources as needed:

> The Board resolved that the Board of Management of the Glenrose Provincial General Hospital express no objection to the inclusion of such students as may be recommended by the Edmonton Public School Board for education in the facility and building of the Glenrose School Hospital . . .
>
> and

> that the Glenrose Hospital would be pleased to add their resources and aid such a study being co-ordinated by the Edmonton Public School Board and other community agencies to resolve this immediate problem of the over-age educable handicapped adult. (Ibid, pp. 57 - 58)

However, the Hospital Board did attach a number of requirements to the study:

> 1. That the students are not included in the benefits of the Multiple Handicapped Children's Program.
>
> 2. That charges may be made by the Hospital for Hospital out-patient services, as may be required, under the Schedule of Charges for Hospital Out-Patient Services of the Alberta Hospitalization Benefits Plan.
>
> 3. That a study will be co-ordinated by the Edmonton Public School Board and that a report be forwarded to the Board of Management. (p. 58)

The Education Department at the Glenrose School Hospital admits on an individual basis over-age students desiring to be involved in an educational program. Many of the multiple physically handicapped students are able to further their education if given an extension of time. This extension may be required due to the loss of schooling while recuperating from an accident or the fact that a handicap so interferes with schooling that two years are needed to complete a normal one-year program.

However, students (4 - 18 years) and over-age students (19 year and over) constitute different groupings for purposes of payment for medical attention they may require while at the School Hospital. These conditions were alluded to in the above quotation. Depending upon the characteristics of the over-age student and his requirements, the educational recommendation to the student may be either to take scheduled classes or courses by correspondence.

Warnock (1978) suggests that no special rules should be introduced to allow children in special schools to remain in school longer than normal because "it would have the unfortunate effects of reinforcing division between the handicapped and the non-handicapped which we are determined to see eliminated" (p. 172). However, the Warnock Commision did recommend that:

> where it is in their interests, children with special educational needs should be enabled to stay at school beyond the statutory school leaving age. (p. 172)

The Education Department has also made its services available to selected adult patients in the Convalescent Rehabilitation Unit. This service allows patients to upgrade their educational qualifications in any aspect of the educational program, including industrial education. The present planning (1982) of a new Glenrose Hospital rehabilitation facility may bring about a change in the Hospital's philosophy which in turn may have implications for the Education Department and its liaison with convalescing adult patients.

FOLLOW UP STUDIES

Preliminary Evaluation: 1966 - 1972

After five years of School Hospital operation, Dr. McPhail, Executive Director of the Glenrose Hospital, communicated in Multiple Handicapped Children's Program: Preliminary Evaluation 1968 - 1972 a comprehensive analysis of the Glenrose School Hospital program. The report gave a number of recommendations and also indicated that children with cerebral palsy make up the larger number of patients, closely followed by patients with muscular dystrophy and meningomyelocele.

For purposes of this study only those recommendations having educational implications were selected for presentation. Summarizing about cerebral palsy patients the report recommended that:

> The educational program should be suited to the needs of the child. For those who are unlikely to benefit from a formal educational program, facilities should be available in the community for recreation, socialization, and other activities. This includes schools for the trainable retarded with and without physical handicaps, day care activity centers for all age groups, sheltered workshops and a range of living facilities. (McPhail, 1972, pp. 26 - 27)

McPhail (1972) went on to say that children who can follow the regular education program should do so in their home community schools. In fact, the author summarizes each section of the evaluation by stating that local schools should be adapted to the needs of the handicapped. This may mean making facilities more accessible so cerebral palsied children and young adults will not have their mobility curtailed (p. 27) or allowing for wheelchair movement for the child with muscular dystrophy. This would result in fewer costs and greater benefits to the child as the author wrote:

> Children can be cared for at home if local schools are properly built or adapted for wheelchair patients. This would result in considerable monetary saving as well as ensuring the continuation of the child as an integral member of a family and all that this implies. (McPhail, 1972, p. 34)

Discussing the child with meningomyclocele McPhail (1972) once again points out the importance of accommodating the physically handicapped child in his home community by recommending that:

> Community schools should be adapted to accommodate handicapped children. It is realized that it will never be possible to have all handicapped children integrated in to regular schools but steps are an unnecessary handicap. (p. 43-44)

Providing the handicapped child with an education in his home school will not abolish the need for educational facilities such as provided by the Glenrose School Hospital (McPhail, p. 27). Instead, this institution could then provide out-patient services, a much less expensive alternative to in-patient or day-patient treatment services (p. 35).

Education Department: Annual Follow-Up Reports

Under the direction of the vice-principal the Education Department at the Glenrose School Hospital since 1972 has conducted follow-up studies of all multiple physically handicapped students discharged from the School Hospital. The primary purposes of these studies were to ascertain how well the discharged students were doing in their after-hospital life and whether School Hospital staff could be of further assistance to the integrating school. In addition, data generated by these studies served a feedback function in reflecting the effectiveness of the educational program, and to some extent the multi-discipline program, at the Hospital.

For the purpose of this research all follow-up reports that were available since 1972 were examined and data that dealt with the various aspects of multiple physically handicapped children who were discharged were synthesized in assembling the following tables. The number of children discharged from the School Hospital each year since 1972 is indicated in Table 1.

Data in Table 1 show the number of multiple physically handicapped students who were discharged from the Glenrose School Hospital since statistics were first compiled in 1972. It is evident from an analysis of the data in this table that since the 1978 - 79 school year the number of children attending the School has slowly declined. However,

TABLE 1

NUMBER OF MULTIPLE PHYSICALLY HANDICAPPED STUDENTS DISCHARGED FROM GLENROSE SCHOOL HOSPITAL

(1972 - 1981)

School Year	Total number of children in attendance	Number of children discharged in June	% children discharged
1972 - 73	200	109	54.5
1973 - 74	178	99	55.6
1974 - 75	173	93	53.8
1975 - 76	155	90	58.0
1976 - 77	163	73	44.8
1977 - 78	149	50	33.6
1978 - 79	180	69	38.3
1979 - 80	166	60	36
1980 - 81	130	56	43

the percentage of students discharged over a three-year period 1978-81 has slightly increased.

Prior to the 1977-78 school year statistics on the average length of stay of those students who attended the Glenrose School Hospital were not collected. Since that school year these statistics have been recorded and are shown in Table 2.

TABLE 2

AVERAGE LENGTH OF STAY FOR STUDENTS

AT THE GLENROSE SCHOOL HOSPITAL

Length of stay[1]	School Year 1977-78	1978-79	1979-80	1980-81
Up to 1.0 year	16	36	19	14
Up to 2.0 years	9	17	20	12
Up to 3.0 years	14	6	6	15
Up to 10.0 years	11	10	10	7
Over 10.0 years			5	3
Total	50	69	60	51

[1] The school year at the School Hospital is ten months per year, September to June.

In Table 2 are data which show that for the 1977-78 school year the average length of stay for 16 students was for one school year. During that school year there were 14 students who attended the school for a maximum of 3 school years. The average length of stay during the 1977-78 school year for 9 students was up to 2 years at the School Hospital.

For the school years 1979-80 and 1980-81 there were students whose average length of stay at the School was over 10 years, 5 and 3 students for each school year respectively. Why these students did not appear in previous reporting years can only be left to conjecture.

It will be recalled from previous content of this chapter that the Glenrose School Hospital primarily admits students who are multiple physically handicapped. The primary disabilities that these students may have range from asthma to cerebral palsy. To show the disabilities that students who were discharged from the School Hospital had during the school years from 1972-73 to 1980-81 inclusive Table 3 was designed. Data in this table show that of the 346 multiple physically handicapped students that were discharged from the School Hospital during the school years 1972 - 1981 inclusive the primary disabilities, identified by medical personnel associated with the School, for 91 of these students were speech and hearing; the next highest primary disabilities of these 346 students was cerebral palsy which was followed by the category other for 49 students. Only one student over this period of nine years was identified as having a primary disability that was classified as visual problems.

In Table 4 are data which show the types of school placements for September of those students who were discharged from the School Hospital the previous June. Data in this table show that the greatest majority of these students, 264, who were discharged from the School Hospital were placed into a regular school classroom when they returned to their home community. One hundred and sixty-five of those discharged in June,

TABLE 3

PRIMARY DISABILITIES OF MULTIPLE PHYSICALLY HANDICAPPED STUDENTS DISCHARGED FROM GLENROSE SCHOOL HOSPITAL 1972 - 1981

Primary disabilities	School year								Total
	72-3	73-4	74-5	75-6	77-8	78-9	79-80	80-1	
Speech & hearing	9	6	10	5	13	18	12	18	91
Acquired paraplegia					5	10	8	6	29
Cerebral palsy	9	10	6	6	10	10	19	13	83
Developmental delay					4	6	3	10	23
Meningomyelocele	3	3	2	2	2	6	3	1	22
Muscular dystrophy					4	3	5	5	17
Rheumatoid Arthritis					3	3	1	2	9
Scoliosis	2	2	2	2	2	3			13
Hearing problems					3	3	2		8
Convulsive disorder						2		1	3
Visual problems							1		1
Asthma	2	1							3
Other	6	13	7	1	2	5	10		44
Total	31	35	27	16	48	69	64	56	346

TABLE 4

SEPTEMBER PLACEMENTS IN SCHOOLS OF STUDENTS DISCHARGED FROM GLENROSE SCHOOL HOSPITAL IN JUNE

Type of school placement	Year of discharge									To-
	72-3	73-4	74-5	75-6	76-7	77-8	78-9	79-80	80-1	tal
Regular class (with or without extra help)	31	35	27	26	24	33	40	22	26	264
Special class (opportunity, adaptation, pre-vocational, private)	13	11	24	13	13	13	22	30	26	165
Attending community program or college								5		5
Not attending school or not known						4	7	3	4	18

when the school year at the Hospital terminated, the following September were placed in a class that was labelled special. These classes in the different cooperating schools were labelled opportunity, adaptation, pre-vocational or private.

To show the type of special classes that students from the Glenrose School Hospital were placed in when they returned to their community school Table 5 was designed.

The data in this table illustrate that of the 30 students discharged from the School Hospital at the end of the 1979-80 school year, 17 were placed in opportunity classes in their home school; while 3 students were placed in each of these types of special classes - pre-vocational/vocational, private school, or dependent handicapped; and 2 students were placed in either adaptation or learning assisted program or a classroom for the hearing and vision impaired.

TABLE 5

DISTRIBUTION OF DISCHARGED GLENROSE SCHOOL HOSPITAL STUDENTS IN SPECIAL CLASSES

Type of special class	School year 1979-80	 1980-81
Opportunity	17	11
Pre-vocational/Vocational	3	2
Adaptation or Learning Asst. Program	2	3
Private School	3	3
Hearing and Vision Impaired	2	2
Dependent Handicapped	3	2
Total	30	23

DEVELOPMENT OF THE INDUSTRIAL EDUCATION PROGRAM

Historical Perspective: Edmonton Public Schools

In 1908, the Edmonton Public School Board (E.P.S.B.) introduced Manual Training at the junior high school level which was the forerunner of industrial arts. Instruction in manual training was given in the unit shop; an organizational plan for teaching trade and technical subjects where students concentrate on one material that involved shop work. Included was drafting and woodwork and these were generally provided by an itinerant teacher who travelled from school to school in the district. The major emphasis of this course was on skill development so that students who completed the program could obtain employment more easily upon leaving school.

The impetus for the program in Edmonton came from Calgary which several years earlier (1900) had benefitted from the introduction of the MacDonald Manual Training Plan. This Plan was in response to the needs of society which was slowly changing in Alberta from an agricultural base to an industrial base and which required therefore not just academic skills but psychomotor skills. It was not a matter of taking "in knowledge from books but to observe with intelligence the material world around them" (Robertson, 1901, p. 528). Calgary adopted manual training and made it part of the school program in 1902.

In 1926, Manual Arts I and II were included as a course of study for secondary schools in Alberta. Manual Arts I included drafting, cabinet work, woodturning and carpentry while the level II included drafting, forging, sheet metal and machine shop (Smith, 1973, p. 48). A definite trend was being established toward the offering of more extensive subject matter in school shops.

In Edmonton, industrial arts instruction was provided in small renovated basement classrooms throughout the system. The trend was also visible here since in addition to drafting and woodwork, metal-work and concrete work were added to the industrial arts program of study.

However, the late thirties and early forties were times of change. The idea of an intermediate or junior high school was adopted, the high school "credit" system came about and the "core" program with electives was introduced. These various innovations had their influence upon the industrial arts program (Smith, p. 51).

In 1938, Manual Arts was renamed General Shop. This change in name was necessitated because many teachers who taught Manual Training were critical of its narrow scope. Under the new name woodwork, metalwork, electricity, automotives, farm mechanics, gas engines, and plastics were made available to students (Smith, p. 52).

Tingley, Supervisor of Industrial Arts for Alberta, in a paper entitled "A Concept of Industrial Arts and its Significance in a Progressive Educational Program"(prepared between 1941 - 1945) stated that industrial arts provides for avocational interests and explorational experiences. Along with these, he maintained that:

> The complexity of the industrial age in which we live demands that if the individual is to cope intelligently with the environment in which he lives, the school should provide a rich enough range of experiences to give at least a reasonable spread of technical knowledges. Herein lies a fertile field for the Industrial Arts. We have been so concerned with the production of "things" or projects, that many of our Industrial Arts units have lacked richness. As education comes to concern itself more and more with real situations, this much-needed objective will be achieved in greater measure. (p. 34)

After the hostilities of World War II many new facilities were added to those that existed. New shops were constructed and for the first time were built above ground level. These new facilities for industrial arts were provided with adequate lighting, ventilation, storage rooms and interior decoration. During this time the decision was made to drop concrete work and add electricity to the other traditional three subjects of drafting, woodwork and metalwork (E.P.S.B., not dated, p. 16).

Until the introduction of the "Alberta Plan" (this will be described in detail in a subsequent section) in 1965, emphasis in industrial arts at the junior high school level continued to be on the learning of facts and on the development of skills that would assist students in gaining employment (E.P.S.B., p. 18).

Although at the provincial level there was concern with the industrial arts program being so much like vocational preparation, changes in program did not come about quickly. Two provincial Supervisors of Industrial Arts did have an insight into how the industrial arts program was to develop if it were to be recognized as part of general education. Early in the forties, Tingley "advocated that the emphasis in industrial arts shift away from specific skill development and move towards experimental experiences and avocational interest" (Smith, 1973, p. 151).

A number of years later in 1956, Mitchell, another Supervisor of Industrial Arts, stated that "there was an increased appreciation of the value of industrial arts courses" by school authorities and that "efforts were to be continuously made to keep the course offerings meaningful and industrially realistic" (Smith, p. 61). Mitchell further noted that:

> The shop curriculum is meeting with general approval and appears to have inherent the qualities of breadth of experience and flexibility of course structure so essential for a successful industrial arts program. (Department of Education, 1956, p. 43)

At the senior high school level industrial arts courses were offered in carpentry, machine shop, sheet metal, electricity, drafting and automotives. Since the purpose of these courses was to provide the students with skills that might help them gain employment, industrial arts had an orientation that was vocationally biassed. However, the time allotted for industrial arts courses on the time-table was not sufficient for students to develop their psychomotor skills properly but was considered too excessive to be regarded as part of general education. This was another reason some educational leaders considered these courses to be a form of psuedo vocational education. This problem was solved in 1963, because of the Technical and Vocational Training Agreement that was signed between Alberta and Ottawa, when vocational education was introduced at the secondary school level.

The Edmonton Public School Board (undated) continues by stating that:

> The introduction of Vocational Education in 1963 made it necessary for students to make an early decision on vocational preferences. To assist them in making wise decisions, it was recognized that the new junior high school program (The Alberta Plan - brackets mine) would have to be expanded to provide exploratory experiences in a greater number of basic areas. The rapidly changing requirements in the world of work and the growth of new occupations made it increasingly difficult for a student to know where to find a place in industrialized society. (p. 17)

The earlier program of industrial arts that was offered in the schools of the province was limited in subject matter because it included only drafting, woodworking and metalworking. The scope of this was narrow and there was little or no flexibility. Even the interrelationships of various aspects of industry, an important and integral part of today's industrial arts program, was missing.

The Alberta Plan

An innovative multiple activity industrial arts program was introduced at the University of Alberta in 1962 by Dr. H. R. Ziel. Various educational leaders in the province made comments about the new program, but two of the most influential officials to support Ziel's multiple activity program were found at the University of Alberta and the Department of Education. Because of the heavy emphasis on skill development for employment, educational leaders in Alberta considered industrial arts to be pseudo vocational education. But industrial arts was part of general education thus the introduction of the Ziel program could not have come at a more opportune time. Smith (1973) comments on the important support Ziel received:

> The two most influential officials supporting him were Dr. Coutts, Dean of the Faculty of Education and Dr. Byrne, then Chief Superintendent of Schools for the Department of Education. (p. 153)

These leaders were of the opinion that skill training for the world of work was not a valid goal or outcome for a general education program of study like industrial arts.

This program was at first referred to as the Ziel Program. However, a number of years later it became known as The Alberta Plan. Originator of the new name was Dr. G. H. Silvius, Professor of Vocational and Applied Arts at Wayne State University, Detroit, Michigan. Dr. Silvius was a noted teacher educator who had written numerous books and journal articles on curriculum development and methods of teaching subjects that were included under the rubric "Industrial Education".

In 1967 Dr. Silvius was extended an invitation as "visiting professor" to the Faculty of Education of the University of Alberta. In addition to delivering lectures to both undergraduate and graduate students, Dr. Silvius made a visit to Hillcrest Junior High School which was the pilot school where the Ziel Plan was being piloted by the Edmonton Public School Board.

In discussing the Ziel Plan with Preitz and Petruk, who were acting as hosts to Dr. Silvius, Silvius suggested that this new program for industrial arts be called The Alberta Plan. The rationale given by Silvius in support of his suggestion was that no innovative program for industrial arts should be identified with one person, the innovator, because there are the many implementors who are responsible for seeing that the plan works. As a result of this discussion the Ziel Plan was renamed The Alberta Plan. (Personal interview with Dr. Preitz, February 15, 1982).

The Edmonton Public School Board became involved in the Alberta Plan as a pilot project in 1963. Upon acceptance of the basic premises for the new program for industrial arts in Alberta by the Department of Education, facilities and equipment were provided by the School Board at Hillcrest Junior High School to evaluate the effectiveness of the program. Junior high school students participated in the development and research into the Alberta Plan as well as in the evaluation of the instructional software that was developed.

In 1965, the E.P.S.B. approved the Alberta Plan for its schools after a successful two-year pilot project. Since the Alberta Plan was based upon the fact that all facets of the world of work are interrelated, industrial arts facilities had to be changed over from the conventional unit shop to a multiple activity laboratory. Thus the learning environment, for teaching industrial arts, had to be conducive to the simultaneous operation of three or more activities.

The learning activities taught in a multiple activity laboratory involve either a material or technical base in the following fields of study:

> Electronics Technology (i.e., electricity, electronics, power supplies, amplifiers, radio, television, logic circuits, computer, electric wiring, design and construction, audio and servicing); Materials Technology (i.e., general woods, building construction, cabinet making, general metals, sheet metal, machine shop, welding (gas and arc), foundry, plastics, ceramics, textiles, foods); Power Technology (i.e., conventional heat engines, small engine tune-up and overhaul, automobile care and tune-up, mechanical systems, electrical systems, electro-mechanical controls, nonconventional power systems, appliance repairs, hydraulics and fluidics, pneumatics and fluidics); Visual Communications Technology (i.e., offset lithography, line photography, black and white, and colour photography, screened photography, layout and design, offset printing and production, mechanical drafting, topographical drafting, architectural drafting, relief printing, print-machine techniques); and General Modules (i.e., developmental, research, production science). (Handbook in Industrial Education, 1976, p. 8)

The industrial arts facility at the Glenrose School Hospital was first used in September, 1968. Organized according to the Alberta Plan, as a multiple activity laboratory, courses in Industrial Arts (at the junior high school level) and General Technology (at the high school level) were offered.

However, in the middle 70's Alberta Education changed the course names at both the junior and senior high school levels to facilitate better articulation and maximum flexibility in the program. Referring to the name change and some of its ramifications Alberta Education stated in its publication Industrial Education Newsletter (January, 1976):

> The former General Technology and Cluster programs have been collapsed into one series of courses called Industrial Education 10, 20 and 30.
>
> The flexibility now available allows schools to build courses through a careful selection from the modules available, tailoring programs to the particular needs of the community

and available resources (facilities and teachers). (p. 2)

In a later edition of the Newletter the industrial arts program was described as follows:

> The Junior High School Industrial Arts program consists of a series of modules, each containing content and activities to be completed in from 15 - 25 hours. The sixteen modules cluster around four major areas: Materials, Visual Communications, Power, Synthesis. (June, 1976, p. 2)

The name change for junior high industrial arts courses was referred to in the Industrial Education Newsletter (September, 1976) where one of Alberta Education's priorities for the 1976 - 1977 year was listed as: "Finish the Junior High Industrial Education Curriculum Guide Revisions" (p. 1).

Industrial Arts and Special Education

The Glenrose School Hospital educational program originated during the time when the industrial arts program of study in Alberta was undergoing an evolutionary change. The Alberta Plan, as it became known, with its accompanying new philosophy, had been introduced at the University of Alberta in 1963 as a more realistic program than the unit shop where one of only three activities were taught. Although the new program with its accompanying philosophical base and goals boasted many advantages over the incumbent program it did so primarily for non-handicapped boys and girls.

The Glenrose Hospital Board of Management felt, after examining the innovative Alberta Plan for industrial arts that it be accepted as the program for the School Hospital. In Industrial Arts Laboratory Planning (1968), Alberta Education, the rationale is given for organizing an industrial arts facility as a multiple activity laboratory:

> 1. The inter-relationships of the technologies can be better illustrated.
> 2. Provision can be made for many different areas of activity which would otherwise not be economically possible.
> 3. It is possible to better meet the needs and interests of a heterogeneous student group, through an environment that resembles in part at least, the diversity of activity found in the world of work.
> 4. While students carry out the major portion of their activities in the area or bay designated for it, they, nevertheless, get some familiarity with the various other activities that are going on around them. (pp. 5 - 6)

The Board also recognized that in any aspect of special education a high degree of structure and organization was needed. The Alberta Plan provided for this because each area is organized with its own hand tools and machine tools, and as well, instructional content and instructional materials for each area are equally organized. As a result, industrial arts within the Hospital setting became a reality.

The literature has confirmed that the decision to include an industrial arts facility in a hospital setting was a wise one. Not only is industrial arts important to severely physically handicapped students in building self-concepts but it also gives them a sense of pride in accomplishing a task. Furthermore, industrial arts benefits students in a number of other ways. In an article titled "Industrial Arts with Modifications" in School Shop (1978) Worrall and Mrowka listed some of the benefits:

> It can also teach them skills which will enable them to live more independent lives as adults; it offers exercize and physical therapy, career preparation skills, hobbies and a chance to improve vocabulary and other academic skills; finally, industrial arts aids handicapped children to understand both their abilities and functional limitations. (p. 81)

The following section of this chapter will examine the philosophy and preliminary planning engaged in by the Board of Management of the

Glenrose Hospital in establishing an Industrial Arts facility at the Hospital.

Rationale and Development of the Industrial Arts Program

Following the Glenrose Hospital Board of Management decision to accept the Alberta Plan, Mr. M. Izzard, then Director of Special Education for the Edmonton Public School Board in 1965 contacted Dr. H. R. Ziel, then Chairman of the Department of Industrial Arts and Vocational Education, University of Alberta, to arrange for someone who might be interested in the equipping of the industrial arts facility at the Glenrose School Hospital. The recommendation was made that Mr. A. Desrosiers, a second year industrial arts student, be given the responsibility for all phases of planning the industrial arts facility that was to be organized as a multiple activity laboratory. Mr. Desrosiers was not given any terms of reference for the work that needed to be done except a general guideline. This guideline was that the Glenrose School Hospital industrial arts facility and program should be flexible enough to allow for entry of any student with almost any disability from any place in Alberta and from any industrial arts program.

Mr. Desrosiers felt that to create such a program would be physically impossible. Therefore he tried "to touch" on as many material and technology areas as possible, emphasizing a conceptual framework based upon common elements found in these areas. He was not so much concerned with specific concepts nor the study of a single area as he was with the importance of the various concepts which promote an understanding of the interrelationship of all the areas (Personal communication with Mr. Desrosiers, 1981).

Mr. Desrosiers consulted with Dr. B. Hohol, associate superintendent of schools, Mr. J. Briggs, the principal of the School Hospital, and Mr. T. Robinson, equipment technologist for the public schools, on needed equipment before tenders were called. There was a wide range of equipment ordered and the cost of this amounted to $39,000.00. This was a sizeable financial investment for the Hospital.

Since the Hospital administration considered the implementation of the industrial arts program as a pilot project they wanted it to do much more for multiple physically handicapped students than any other similar program in North America. The unofficial goal was emphasized in the thorough planning, in the amount of time invested, in the large expenditures and care that was expended in setting up the industrial arts laboratory.

In education, Mr. Briggs, first principal of the School Hospital said "that it was the School Board's desire to offer a 'total program' and it was assumed that industrial arts was part of that program." The Alberta Plan was considered by the chief administrators of the School Board to be the program for industrial arts which should be introduced at the Glenrose School Hospital. The main reason for accepting the Alberta Plan was that it dealt with an acquaintanceship with the tools, materials and technologies of industry rather than with specific skill development. Secondly, the program was most appropriate because many miniature and cut-away models were to be used to transmit various concepts to students that would reinforce concepts taught in academic subjects.

Between 1968 and 1971, Mr. Desrosiers was involved in planning the layout of the laboratory, installing and placing of equipment, consulting with Hospital maintenance workers on furniture and equipment modifications, as well as considering the curriculum requirements. A number of proposals for this new facility were received from the departments of occupational therapy and physiotherapy and were craft oriented with therapy as one of the major goals to be achieved. However, it was the desire of the Hospital Board that the industrial arts facility be an integral part of the educational program. Members of both the educational profession and the medical profession saw the Glenrose School Hospital as a facility that would admit students from the entire province as well as from the territories. Because of diversity of patient background the educational program that was to be offered was to be broad and flexible. The industrial arts program that was proposed would include both of these characteristics and would allow for continuity between the at home and away-from-home school program.

Mr. T. D. Baker, then Associate Superintendent of E.P.S.B. and a member of the Glenrose Hospital Board of Management, took the position that the School Hospital was to be considered as a place for children with special needs and that special facilities were needed to provide a "total program" for these students. It was considered important by Mr. Baker that physically handicapped children be provided with the opportunity to handle and study tools, materials, and processes as well as basic technologies. Dr. K. Grierson, psychologist with the Edmonton Public School Board, a member of the Advisory Committee on the Physically Handicapped Childrens' Unit (and made up of medical personnel such as a doctor and nurse, rehabilitation workers such as an occupational and physiotherapist, community citizens such as a housewife and business person, and individuals concerned with education such as a psychologist and administrator) which was an advisory committee for the new School Hospital, indicated that if teachers for the School Hospital were to be supplied by the Board that one of the conditions for supplying these teachers would be that a full educational program be offered. Industrial arts was to be part of the total educational program.

Mr. G. Sanders, Director of Vocational Education, Edmonton Public School Board, made the suggestion that persons in political circles did not appreciate the financial expenditures associated with equipping the industrial arts laboratory. However, he was of the opinion that it was a unique opportunity for a certain group of students and that industrial arts organized on a multiple activity pattern would best suit the needs of the exceptional students who would be taught in this laboratory.

Dr. J. Bradley, former Executive Director of the Glenrose Provincial Hospital, said that the industrial arts program was looked upon as a testing program where adaptablility of the various handicaps to the various industrial processes could be evaluated. The financial expenditures for start-up costs for the industrial arts program were much higher than other in-house expenditures but he was of the opinion that these costs reflected the priority that had been placed on this program. Dr. Bradley suggested that the industrial arts program reflected the bringing together of valuable program content from other institutional programs.

Establishing the Industrial Arts Facilities

"Industrial Arts" and "Home Economics" were first mentioned in the Glenrose Hospital Board of Management (hereafter called Board) Minutes of January 27, 1966. A review of these Minutes indicates that the Hospital architect submitted to the Board a report on the development and completion of the "north wing lower floor" of the new centre which was to be the location of the Industrial Arts and Home Economics laboratories. It is evident from the Minutes that the architect estimated that an additional $43,200.00 would be required to finish this area.

A motion was made, seconded and carried that the Executive Director be requested to write to the Hospitals Division of the Department of Health regarding the financial arrangement for this portion of the project (Glenrose Hospital Minutes, 1966, p. 9).

These facilities were again discussed at a subsequent meeting of the Board, April 26, 1966. It is evident from a review of the Minutes of that meeting that there was some confusion whether or not the amount of $43,200.00 was in addition or part of the approved appropriation of $3,500,000 for the Glenrose School Hospital. A letter from Mr. Campbell (Hospitals Division) dated February 22, 1966 indicated approval of the $43,200.00 in addition to contracts approved to that date. Mr. Campbell indicated that the Industrial Arts and Home Economics projects were included in the three-and-a-half million dollar appropriation.

The following note appears on the Minutes of April 28, 1966 meeting:

> Note: This project was not included in the original construction contract as the developmental planning of the program had not been completed by the Public School Board. (p. 21)

In discussing the plans for the Pre-Vocational area at the May 26, 1966 meeting of the Board it was pointed out that the architect's working drawings were ready to be submitted to the contractor for final pricing. It was further discussed by members of the Hospital Board that the plans receive approval from the Hospitals Division and that a Change Order be written. From this discussion the following motion was made and approved:

> that Poole Construction be requested to estimate the cost for developing the pre-vocational area in the School Hospital, and after approval by the Hospitals' Division the Executive Committee be empowered to approve the Change Order. (Glenrose Hospital Minutes, 1966, p. 34)

From correspondence with Poole Construction it was learned that the contractor estimated that it would cost $159,498.00 to develop the industrial arts and home economics areas. The Board, in its deliberation of this item agreed that these two areas in the basement of the school be sealed off until work was started in this area.

The industrial arts and home economics areas were part of the agenda of the July meeting of the Board of Management. At this meeting a revised estimate of $105,820.00 was submitted by Poole Construction, however the contractor had attached several provisos to this estimate (what these provisos were do not appear in the published Minutes). It was reported at this meeting that the Hospitals Division approved that the work in this area proceed but that:

> 1. Approved automatic fire detection as outlined in the National Building Code of Canada section 6.7.2.7. be installed.
>
> 2. Ironing outlets to be equipped with pilot lights.
>
> Cost of installing the above items will be an addition to the estimated price submitted by Poole. (Glenrose Hospital Minutes, July 21, 1966, p. 54)

Also at this meeting it was reported, because there were insufficient funds to cover the costs of financing the industrial arts and home economics areas, that a money by-law may be required to cover these costs. With reference to these costs, the Change Order, and funds to pay for these costs the following motion was made:

> that the revised estimate submitted by Poole Construction Limited for the development of the pre-vocational area be accepted, and that the work be executed as a change order by the contractor, provided funds are available after consultation with Hospitals Division. (p. 54)

It is evident from the August 25, 1966 Minutes of the Board that the Hospitals Division Reviewed the Poole Quotation for this area and agreed that shareable equipment that amounted to $7,466.00 be removed from the tender. With a Change Order Poole Construction began construction of the industrial arts and home economics areas.

Because of these delays and the delay in delivery of certain items the contractor was unable to complete the industrial arts and home economics areas until after January, 1967 (Glenrose Hospital Minutes, October 19, 1966, p. 74).

The architect reported to the Board at its March 30, 1967 meeting that a final inspection of the facilities had been carried out but that a number of oustanding deficiencies remained in the industrial arts area (Glenrose Hospital Minutes, 1967, p. 21). Three months later, after a tour of the industrial arts facilities by a group of individuals including the architect, his consultant, Glenrose administrators and the industrial arts instructor, the request was made by the School Board that the Hospital Board provide for the installation of panic buttons and an isolation transformer to safeguard against accidents. The Glenrose Hospital Minutes of June 29, 1967 recorded that:

> The School Board requested that panic buttons and an isolation transformer be installed in the industrial arts area as there is insufficient control in case of emergency in the area.
>
> The Architect, his consultants, Glenrose staff and the industrial arts instructor toured the area and recommended the changes.
>
> The Board approved a Motion by Mr. Bates that panic buttons and an isolation transformer be installed in the industrial arts area and that the appropriate Change Order be issued. (p. 50)

It was also at this meeting that the School Board equipment technologist requested the Hospital Board to supply adjustable benches so that the equipment mounted on these could be raised or lowered. These benches were to be designed so that they would permit the physically handicapped learner to work from a wheelchair, a stretcher or a bed.

The industrial arts facility was described as 99% complete at the November 2, 1967 Board meeting by the architect. In the Minutes it was recorded as:

> This area is now 99% completed. The architect is assembling the extra charges incurred from hooking-up equipment and putting the area into operation. A Change Order for approximately $1,000.00 will be issued. (Glenrose Hospital Minutes, 1967, p. 72)

On September 1, 1968, the industrial arts laboratory was opened to students. As part of the educational program and under the jurisdiction of the Education Department at the Hospital, this laboratory was multiple activity organized and equipped to offer students option courses based upon the world of work. Thus the equipment purchased to furnish the laboratory was bought to supplement the industrial arts program philosophy. The Board examined industrial arts and home economics equipment at its September 26, 1968 meeting because the Hospital Services Division of the Alberta government felt that this equipment could also be used for therapeutic purposes by the therapy departments. However, the Board suggested a number of reasons why this was not possible.

Mr. Baker, as Chairman of the Board, was adamant that educational philosophy and therapeutic philosophy were separate entities best left to themselves. The following excerpt from the Minutes show the account of the related discussion:

> Dr. Bradley reported on correspondence with the Hospital Services Division regarding duplication of equipment in the School Hospital, and on a conference held with School Board and Hospital Services Division officials.
>
> It was the opinion of the Board that although there may be duplication of equipment in the Glenrose complex, this was unavoidable as equipment could not conveniently be used by the education department, and by the therapy departments in the School Hospital, without interfering with the educational and treatment programs for the patients.
>
> The Board stressed that equipment for the school area has quite a distinct and separate purpose and use from the equipment which is used as a therapeutic tool in the therapy departments.
>
> The Chairman advised the Executive Director that the original agreement between Mr. Aalborg and Dr. Ross did not consider joint use of equipment by the treatment areas and the education area in the School Hospital.
>
> The Board instructed the Executive Director to write to the Hospital Services Division regarding this matter. (hospital Board Minutes, 1968, p. 62)

The original agreement between Mr. Aalborg, then Minister of Education, and Dr. Ross, then Minister of Public Health, was honoured and joint use of the industrial arts facility did not come into force.

The Multiple Activity Laboratory

The industrial education laboratory at the Glenrose School Hospital is organized as a multiple activity laboratory that is spacious, clean and well equipped and where a variety of exploratory experiences can be presented with a minimum of room and equipment (Alberta Education, 1967, p. 4). In this laboratory multiple handicapped students have the opportunity to become involved with a wide variety of "hands-on" activities that include a selection of materials and technologies found in a productive society.

The laboratory covers about 400 m² and is divided into four main areas. Each area is a self-contained unit that includes relevant textbooks, programmed pictorial instruction, information sheets, templates, expendable supplies, handtools and some machine tools. By providing each area with a complete complement of software and hardware inter-area traffic is kept to a minimum and little time is wasted by the student searching for needed tools or supplies. In describing the organization of an area, Preitz (1973) wrote:

> these areas are organized to make them as autonomous as possible, to minimize the amount of inter-area traffic, and to maximize the learner's time while he is in the laboratory by having everything available to him to use. (p. 90)

In these four areas the following materials or technologies are taught: woods, ceramics, plastics, metals, electricity, electronics, computers, photography, printing, drafting, power transmission, power sources, testing, welding and mechanical technology. Each area is large enough to accommodate from four to six students. Figure 8 is the floor plan of the industrial arts laboratory which shows the layout for each area and its size.

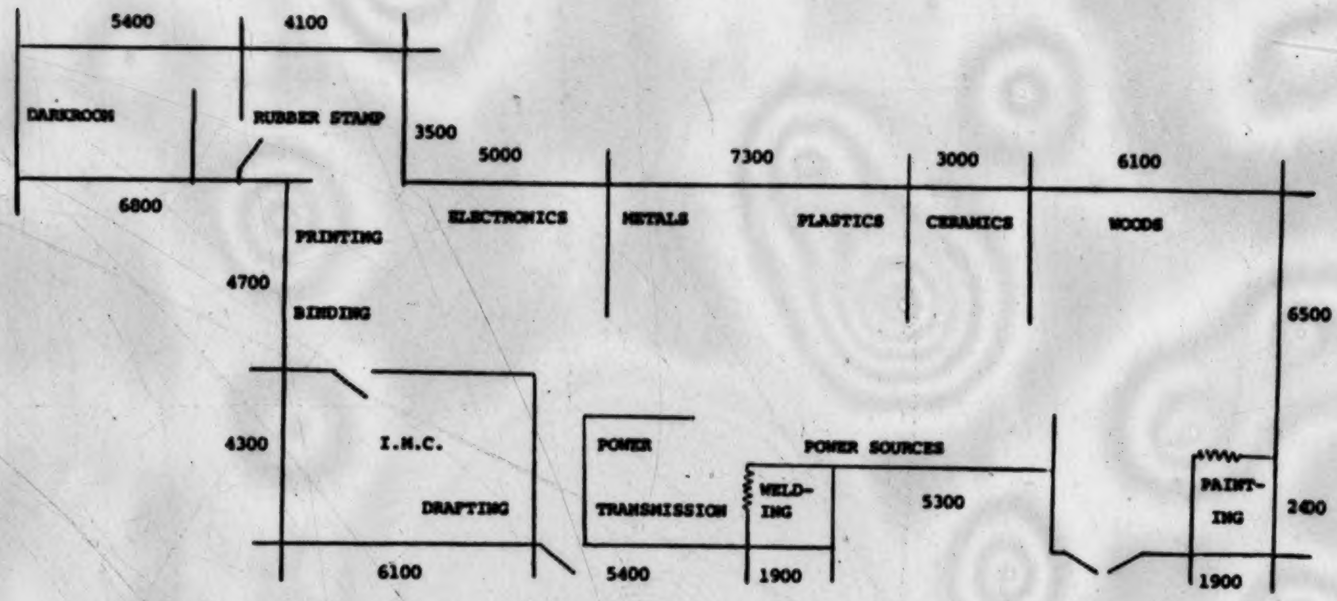
The general descriptors of the content of the areas are: Graphic Communications, Electronics, Materials and Power Technology.

The Instructional Materials Centre. Another aspect which promotes autonomy of the industrial arts laboratory is the inclusion of an Instructional Materials Centre (I.M.C.). An I.M.C. is best described as a room where instructional materials and their accompanying audio-visual hardware are stored for both student and teacher use. Instructional materials that may be stored in the I.C.M. include film strips, slide-tape presentations, 8 mm single concept film loops, transparencies, models and cut-aways. The audio-visual apparatus and materials stored

FIGURE 8

SCHEMATIC FLOOR PLAN OF THE INDUSTRIAL ARTS

LABORATORY - GLENROSE SCHOOL HOSPITAL


5400
4100
DARKROOM
RUBBER STAMP
3500
5000
7300
3000
6100
6800
ELECTRONICS
METALS
PLASTICS
CERAMICS
WOODS
PRINTING
4700
BINDING
6500
4300
I.M.C.
POWER
POWER SOURCES
DRAFTING
TRANSMISSION
WELD-
ING
5300
PAINT-
ING
2400
6100
5400
1900
1900

(All measurements in millimetres)

in the I.M.C. means that the equipment and software are always available to augment the learning process. The I.M.C. in the industrial arts laboratory is a small room which also serves as a teacher's office. The I.M.C. was very aptly described by Preitz (1970) when he wrote:

> the core repository for the housing and distributing of the major items of software and hardware used for learning. The I.M.C. contains books, transparencies, filmstrips, slide-tape presentations, videotapes, and models, as well as the apparatus either to project or record these visual materials. (p. 90)

Equipment Modification. Equipment that was purchased for the industrial arts laboratory was equipment that was available from school equipment suppliers. These pieces of equipment are manufactured so that they can be used with non-handicapped individuals and consequently a number of pieces of equipment had to be modified, although not extensively, to meet the needs of the multiple handicapped learner. Ideas for these modifications came primarily from Mr. Desrosiers as he experimented with the handicapped students on various pieces of equipment. Actual modifications were made by Hospital maintenance personnel.

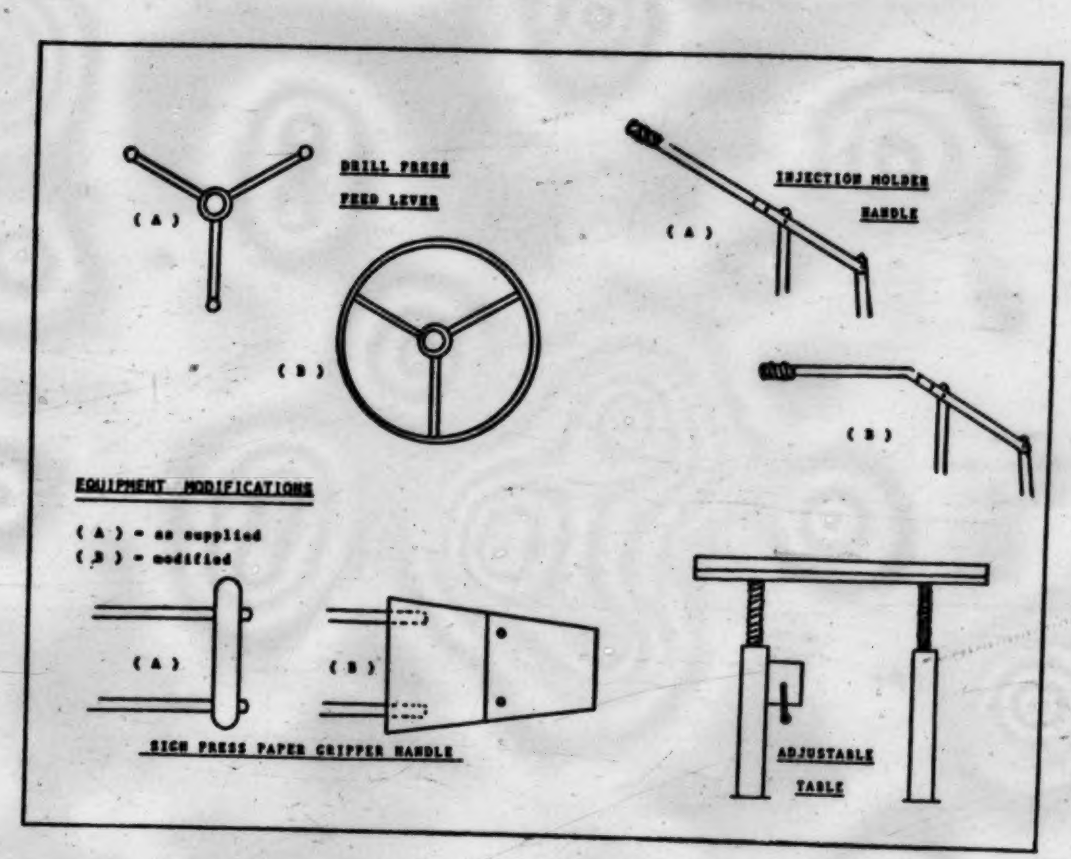
It was found by those involved in "setting-up" the laboratory that by adding a screw-thread to the legs of a table or work bench the work stations on that working surface could be adjusted either up or down to meet the needs of the learner. There were a number of minor modifications to equipment that had to be made. For example, the handle on the injection press was too high to be manipulated by a student sitting in a wheelchair, thus a second handle was fabricated which included a curved form. This and some of the other modifications that were made are shown in Figure 9.

On the drill press the spoked feed lever was replaced with a type of steering wheel so that students, once in contact with the rim, could

FIGURE 9

ILLUSTRATIONS SHOWING

EQUIPMENT MODIFICATIONS


DRILL PRESS
FEED LEVER
(A)
(B)
INJECTION MOLDER
HANDLE
(A)
(B)
EQUIPMENT MODIFICATIONS
(A) - as supplied
(B) - modified
(A)
(B)
SIGN PRESS PAPER GRIPPER HANDLE
ADJUSTABLE
TABLE

maintain pressure on the drill bit point. Another modification that was made was to the sign press, a piece of equipment found in the graphics area. This modification involved substituting a longer handle on the paper gripper in order to allow weaker students to operate this part of the sign press. A modification was made to the metal lathe that would increase leverage. On this lathe the power feed clutch ball handle was replaced with a file handle. A ramp which raises wheelchairs 15 cm from the floor is available in the laboratory and is most often used to enable wheelchair students accessibility to the wood lathe. Since the wood lathe can not be lowered sufficiently the ramp provides a method to permit both wheelchair and ambulatory student to operate the wood lathe.

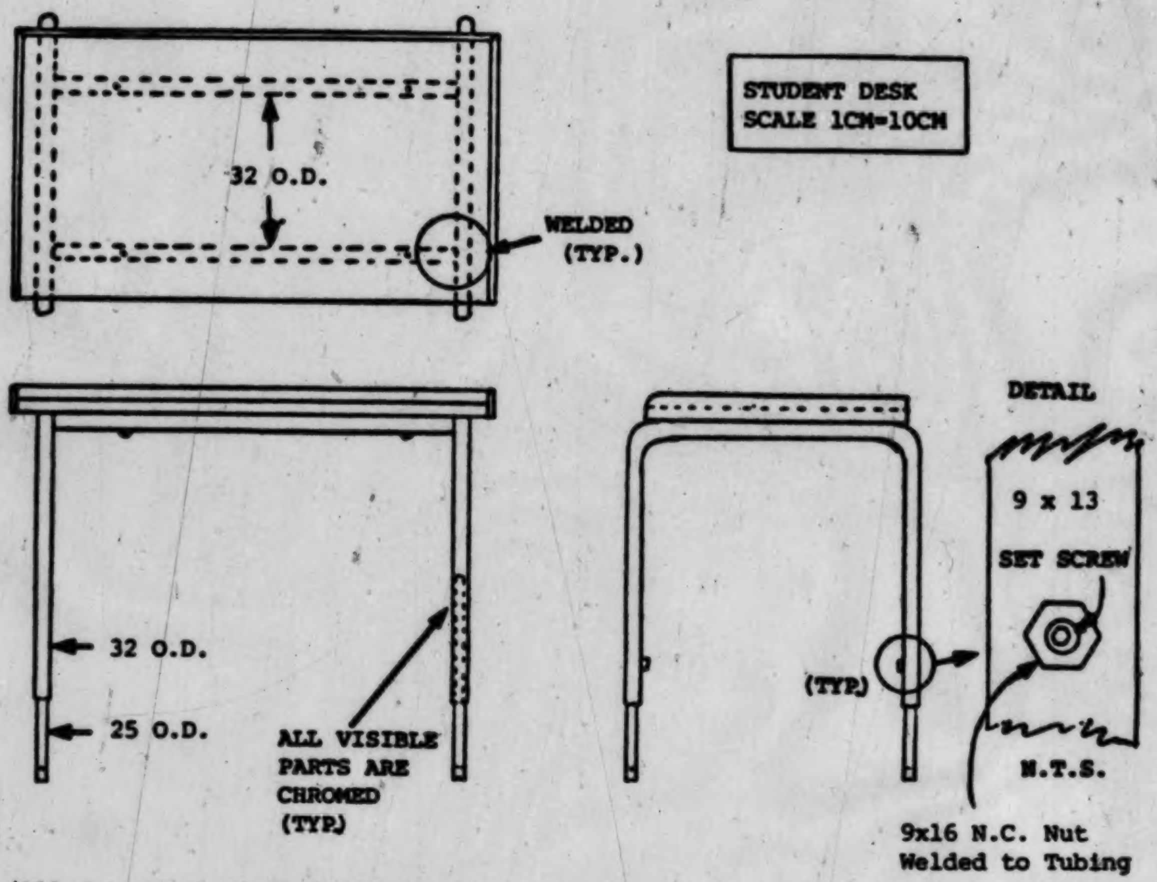
To accommodate students who are immobile because they are wheelchair, stretcher or bed bound, there are a number of small portable tables (see Figure 10) in the laboratory which can be quickly converted into a one or two student work station. Because of their portability these tables can be moved anywhere they are needed and they can be raised or lowered to a comfortable working height for the student. These tables are important because the main work benches are of steel construction and are a standard working height of 80 cm and can not be modified without considerable expense.

Organization of Industrial Education Classes

Junior and senior high school classes. The industrial arts laboratory at the Glenrose School Hospital is used as a teaching/learning setting for grade 7, 8 and 9 industrial arts classes and by grade 10, 11 and 12 industrial education classes. These classes for junior and senior high school students are scheduled one half day per week. The students spend

FIGURE 10

PORTABLE WORK STATION


STUDENT DESK
SCALE 1CM=10CM
32 O.D.
WELDED (TYP.)
32 O.D.
25 O.D.
ALL VISIBLE PARTS ARE CHROMED (TYP.)
(TYP.)
DETAIL
9 x 13
SET SCREW
N.T.S.
9x16 N.C. Nut
Welded to Tubing

(All measurements in millimetres)

approximately 80% of their time working with either a materials or a technology in one of the four areas in the laboratory. Part of the students' class time is used observing a teacher demonstration on how to use a tool or how to perform a process; students may also see films that are related to the topic under discussion; or they may make a field trip. Emphasis is on hands-on work in the industrial arts laboratory.

Elementary classes. A modified industrial arts program is available to grade 5 and 6 students in order to give the multiple physically handicapped children additional time in the industrial arts program. These grade school students are scheduled to be in the laboratory for one quarter day per week. During the time they are scheduled for industrial arts they receive safety instruction and are permitted to perform simple hand tool operations and to make projects within their range of ability.

Since the number of junior and senior high school classes assigned to industrial arts varies from year to year, when time is available other elementary school classes are permitted to become involved in the industrial arts option program. Students in grades 1 to 4 are scheduled for laboratory time on a rotation basis of a minimum of five to a maximum of ten hours per year. During the time these elementary school students are in the laboratory, they are involved in very rudimentary learning activities that involve the saw and hammer in woods, hand molding activities in ceramics, filing and hand polishing in plastics, composing and sign printing in graphics and contact printing in photography. These learning activities are called living experiences and involve very simple tasks which most non-handicapped persons perform as part of everyday living. However, persons with a multiple handicap often do not have the opportunity to engage in living experiences of a practical nature and thus miss out on one of the "stepping stones" in learning.

The "living experiences" phase is an outgrowth of the industrial education program and permits elementary school students the opportunity to diversify their abilities and to learn how to work with a material. This phase of the industrial education program is shown in Figure 11, where the relationship of living experiences is shown being related to the awareness and exploratory phases (industrial arts) of the program. This latter phase in turn is related to the more specific clustered experiences phase (industrial education) which can be regarded as pre-vocational education.

Course Content and Individualized Instruction

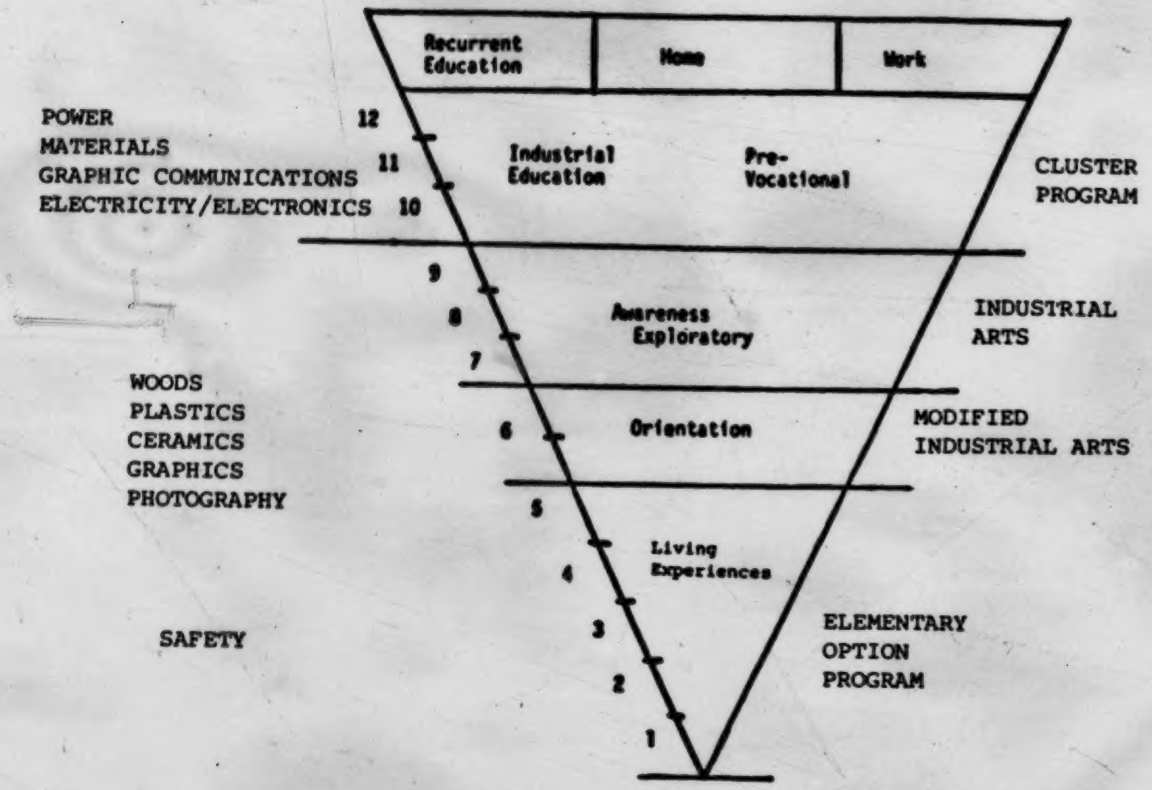
Course content for the industrial arts program at the School Hospital is taken from the curriculum guides provided by Alberta Education. These curriculum guides are made available in all fields of study including industrial education. In the Handbook in Industrial Education (1979) the following statement appears:

> The authors of the Industrial Education curriculum guide recognize that the needs of society have changed and with them the approach to knowledge acquirement. Students today must be helped to learn how to learn, to conduct inquiry, to study independently, to make choices and decisions, to use technology, and to live with change. (p. 1)

The concept found in the above quotation applies to handicapped students as it does to non-handicapped students. The multiple physically handicapped students are not only in need of much additional time to do the course requirements but they also need considerable individual attention. Wargo (1977) states that for the "student with special needs the need for individualized instruction is all important. Individualizing

FIGURE 11

PARADIGM OF THE INDUSTRIAL EDUCATION PROGRAM AT GLENROSE SCHOOL HOSPITAL


Recurrent Education
Home
Work
POWER
MATERIALS
GRAPHIC COMMUNICATIONS
ELECTRICITY/ELECTRONICS
12
11
10
Industrial Education
Pre-Vocational
CLUSTER PROGRAM
9
8
7
Awareness Exploratory
INDUSTRIAL ARTS
WOODS
PLASTICS
CERAMICS
GRAPHICS
PHOTOGRAPHY
6
Orientation
MODIFIED INDUSTRIAL ARTS
5
4
3
2
1
Living Experiences
SAFETY
ELEMENTARY OPTION PROGRAM

instruction means that learning events are tailored as closely as possible to the individual learner's needs" (p. 20). This author also points out that equal educational opportunity for special needs students would be defeated if basic content, goals and objectives of industrial education were drastically revamped (p. 20). Harder (1979) of Alberta Education suggested that children learn more readily if content is considered relevant by them when he wrote:

> careful attention must be given to meeting individual needs if school programs are to be effective and relevant, for it is believed that children who see themselves as worthy, wanted and desirable normally will learn more readily. (p. 4)

To help meet individual needs in the industrial arts program requires much time on the part of the teacher and it becomes therefore imperative that the teacher use teaching methods that will promote maximum learning. The Alberta Plan makes provision for the use of a wide variety of teaching methods to be used in a learning environment that is organized as a multiple activity laboratory. Preitz and Young (1972) made mention of some of the teaching methods used when they wrote:

> Teaching methods used in Industrial Arts laboratories are designed to accommodate discovery learning and to provide individual instruction through small group demonstrations and micro-lectures; to individualize instruction through specially designed instruction sheets and pictorial programmed instruction, and to give the instructor the latitude to use a wide variety of other teaching methods which permit the individual progress of each student. (p. 3)

Describing pictorial programmed instruction, a special form of self-instruction material for use in industrial arts laboratories, and how it promotes individual progress Preitz (1978) wrote:

> that the teacher using Pictorial Programmed Instruction can devote more time to individual students who may encounter difficulties, while other students can continue to progress at their own individual rates. (p. 9)

These specialized forms of instructional material provide the multiple activity industrial education program at the Glenrose School Hospital with another dimension of flexibility to meet the needs of handicapped students. It allows the teacher to experiment with various instructional methods such as booklets, audio-tapes or slides, until an optimum match is obtained between student and method.

Hull and Eddy (1977) in an article entitled "Instructional materials for teaching special needs students" express the need for the industrial educator to communicate openly with the handicapped student since the educator does not have all the solutions to various problems of the handicapped. Talking about persons with visual and hearing impairments, and one can add many other impairments, the authors wrote that to develop instructional materials for handicapped persons:

> becomes a matter of discovering what works for each student. By communicating openly and by not being afraid to make mistakes, instructors should readily come to know what does and what does not communicate for a particular student. (p. 22)

The urgency to experiment and find an instructional method that works for a particular student is also addressed by two medically oriented authors. Because education is so important, Bleck and Nagel (1975), writing from a medical perspective, suggest that the eclectic method be used with handicapped students. These authors express the eclectic method in the following manner:

> Using what works and what is necessary for each child to the extent and nature of his disability and his developmental age. . . . Education, self-care skills, and certainly communication deserve the most prominent place. (p. 59)

Making the student comfortable may further enhance the learning environment and promote individualization. This extra dimension could consist of the lowering or raising of a work surface, rigging up a special clamping arrangement, adapting a sanding block, interpreting a safety rule in a unique way or delivering tools to a student's work station. These too, are components of the process to individualize instruction.

A vital component of the individualized instructional package is the need to consider implementing specific strategies. This means that information must flow from teacher to student and vice-versa. Wargo (1977) writes that "information must be provided to students as well as providing feedback to the students regarding how well they are doing" (p. 24). In industrial education at the Glenrose School Hospital "huddles" are held before and after each class to review and summate target behaviours such as the observance of safety rules, courteous treatment of co-workers, etc. These "huddles" serve to facilitate two-way communication and are very important since discussion at these form the basis from which the next lesson's instruction will proceed.

Student Characteristics

Boys and girls who are taught in the industrial arts laboratory at the School Hospital are multiple physically handicapped. This means that these learners may have one or a combination of the following physical disabilities: speech and hearing, acquired paraplegia, cerebral palsy, meningomyelocele, spina bifida, muscular dystrophy, scoliosis, developmental delays, rheumatoid arthritis or convulsive disorders. To complicate matters further many of these children also exhibit learning problems such as reversals, lack of generalization, and inability to use cues.

Physically, the students who attend classes in the industrial arts laboratory range from those who are independent or completely mobile to those who are very dependent. Students who are very dependent walk with difficulty and must be assisted with either braces or crutches, or they may require the use of a wheelchair, a stretcher or a bed. The industrial arts laboratory has double doors so that many modes of transporting physically handicapped students can be accommodated.

Abilities of handicapped students vary greatly and goals within reach of one student may not be attainable by another student because of the individuality of the disability. It is often assumed by lay people that disabled persons within the same category (e.g. cerebral palsy, muscular dystrophy) form a homogeneous grouping. This concept is inaccurate. The fact is that there is a greater heterogenity among disabled persons than among non-handicapped persons. A pamphlet sponsored by the Cerebral Palsy Association of Alberta entitled What is a Spastic? amplifies these differences and says that:

> no two spastic people are precisely alike. Some are so lightly affected that they have no obvious disability. Others may be much more severely handicapped. They may be clumsy in their walk, or they may have difficulty with their hands or with their speech. Some are even unable to sit and can do little for themselves. (no page number given)

Speaking about the intellect, the pamphlet illustrates a similar dichotomy by stating that:

> Spastic people sometimes have higher than average intelligence, though many are backward because of their handicaps. They can find it hard to control their facial expressions and may seem to be mentally retarded; but some of those who seem to be severely disturbed are in fact the least affected in their intellect. (no page number given)

Reflecting upon another disease, spina bifida, Lauder, Kanthor, Myers and Resnick (1979) point out similar concerns as were expressed for cerebral palsy. A disability causing a multiple physical handicap results in a complex set of problems which usually affect their learning and educational opportunities. Lauder and others wrote:

> Children with spina bifida usually have normal intelligence but multiple physical handicaps resulting from damage to the developing nervous system. They have various degrees of paralysis, sensory loss, bowel and bladder incontinence, and, usually, hydrocephalus. These physical problems may limit mobility, socialization, independence, learning and educational opportunities. (p. 432)

However, no student is excluded from the industrial arts program because of severity of handicap unless certain behaviors associated with that handicap place that student or his peers in jeopardy. This decision to exclude or to include the student is made by the industrial arts teacher.

The Project Approach

The project is viewed by physically handicapped students, no matter how severely handicapped, as the most important aspect of the industrial arts program. To be involved in a process using tools and materials is motivating. At the School Hospital emphasis is placed on "hands-on" work with the projects sufficiently small enough to allow students to maintain contact. A larger project would necessitate help from a more physically capable person. Thus, for example, a plastic pin-tray would be a suitable project whereas a wooden coffee table would not allow for continuous student contact.

The range of tools, both hand and machine tools, used by a physically handicapped student depends to a large extent upon his physical abilities and requires close cooperation between student and teacher. Although a number of tools have been modified, the majority of hand tools and machine tools have not been modified but are used as originally supplied. The student himself must actively seek to what extent and which tools he will attempt to use in the process of completing a project.

LEGISLATION AND THE EXCEPTIONAL CHILD

Equal Opportunity for Handicapped Children

The Glenrose School Hospital opened seven years after the Declaration of the Rights of the Child (1959) was adopted by the United Nations General Assembly. This Declaration, to which Canada was a signator, states in part that a child:

> shall be given an education which will promote his general culture, and enable him, on the basis of equal opportunity, to develop his abilities, his individual judgement, and his sense of moral and social responsibility, and to become a useful member of society . . . (for) society owes to its children the best that it has to give. (p. 104)

In Alberta, the Worth Commission (1969 - 1972) examined the province's educational system in the light of changing societal needs and values. In the Commission's final report A Choice of Futures (1972) the following statement is made about society that it must:

> accept and act upon the view that it is the duty of society to provide educational services for every individual child according to his needs, abilities, or disabilities. (p. 78)

Since a number of children in Alberta are multiple physically handicapped and in need of considerable nursing care that includes all forms of therapy, it would be difficult and expensive to have these services provided in a normal school setting. The services are more easily provided in a hospital setting where various services required by multiple physically handicapped children are already in place.

With regards to the educational program at the School Hospital, it was understood by the Edmonton Public School Board that it would not be a watered-down or special program but would be like the educational program offered in other Alberta schools. The educational program was to be accredited by Alberta Education and would articulate with other schools. Since the School Hospital offered an accredited general education program it was expected that industrial arts at the junior and senior high school levels would be an integral part of this program.

In describing New York's Human Resources Center program Worrall and Mrowka (1978) wrote that children, even severely handicapped children, are entitled to a well-rounded education including industrial arts, home economics, driver education, physical education, laboratory science and more. The industrial arts component of the program was discussed in a previous section of this chapter.

Changes in Legislation

The past three decades have been challenging times for those concerned with the education of the handicapped. Because of favorable court decisions and legislation, education for these atypical children is now their right. This has not always been so.

Laski (1979) wrote about the extent to which laws worked against the interests of handicapped individuals and shows that even if the law promoted the well-being of these persons it only did so on a superficial level. The author wrote that:

> Laws characteristically excluded handicapped persons from services, benefits and protections provided as a matter-of-course to all citizens. Specialized legislation enacted to protect the disabled was premised on notions of charity rather than entitlement, and implemented so as to segregate the disabled and suffocate their ability to participate in society. (p. 1)

Part of the problem in the above quotation may well be due to the fact that for many years various interest groups have made it their vision to provide for the needs of special children. However, children who were multiple physically handicapped were often ignored since their problems were considered too complex to be solved by citizen interest groups. In response to other specialized needs, federal, provincial, and local authorities became involved and a fragmented educational system emerged. Lazure et al. (1972) examined the involvement of interest groups in various educational concerns and says that "these patterns for organizing and financing schools have tended to create a chaotic spectrum of services for the children about whom we are concerned" (p. 79). The report illustrates the problematic facets of special education by stating:

> with the federal government involved in a few special areas:
> with the province being solely responsible for the education of certain specialized groups such as the blind and the deaf:
> with some local school boards assuming and others denying responsibility for the education of children with emotional and learning disorders;
> with certain parent or special interest groups establishing and financing special education for children. (p. 79)

Legislation is generally an expression or reflection of public concern and such was the case in the United States when Congress enacted P.L. 94-142. Kahn (1978) wrote that:

> P.L. 94-142 was not drafted by a Congress acting on whim. The legislation is the public expression of a society concerned that a large chunk of its available human resources was being wasted, and determined that the promise of a better life through education - and therefore job opportunities - would be delivered to a great many people. (p. 2)

Although the decision handed down by Justice O'Byrne of the Alberta Supreme Court in August, 1978, was an interpretation of certain sections of the Alberta School Act, the action was precipitated by public concern. With the emergence of the new thought in the seventies it was hoped many loose ends in education would be pulled together - and they were. It was a time when some "teeth" were put into legislation guaranteeing handicapped persons the same rights as existed for non-handicapped persons. Although the legislation did not solve all of the problems it was seen as a means to an end. Lives of handicapped individuals were influenced as a steady transition took place in the law from being a negative factor to being a positive factor. It was also during this time that handicapped persons "became aware of the influence of legal and civil rights upon their ability to achieve an appropriate status in society" (Laski, 1979, p. 30).

Integrating the Handicapped Child

The movement toward accepting the handicapped and integrating them into society to the fullest extent possible was seen as an ultimate answer to providing equal educational and social opportunities for handicapped students. However, this trend toward educating the handicapped child with his normal peers to whatever extent was compatible with his fullest potential development did not solve all of the problems nor did it meet all of the needs of every handicapped child. Some children are too severely handicapped to have their needs met in the mainstream of education. Cruickshank (1969), a respected authority in the field of the psychology and education of exceptional children and youth, wrote:

> although public schools and community clinics will undoubtedly play an increasingly important role in the care, treatment and education of the multiply handicapped child, it is this writer's considered opinion that the problem can be better handled in the residential setting. (p. 235)

Concern for many years centered on the idea of a "generalized human mind" and not on the uniqueness of people, let alone the uniqueness of handicapped persons. With the advent of intelligence tests have also come ideas and concepts which have made modern programs of education for exceptional children possible. This appears to be the pattern adopted in many countries around the world where special education programs, apart from the normal stream, have been introduced to meet the educational needs of various handicapped children. Kirk (1972) discusses the experiences of a number of countries where education for all children was compulsory and general programs of education were found unsuitable for the exceptional child. In discussing this issue this author said:

> Today in the United States, as well as in Western European countries and the Soviet Union, provisions for the education of exceptional children are relatively universal. Practically all countries who have established universal and compulsory education have found that general programs for the ordinary child are not suitable for the exceptional child. (p. 7)

Discussing the effects of integrating physically handicapped students, Haskell and Anderson (1969) suggest that the problem is so complex that it may not be possible to say what type of service (normal school or special school) is inherently better than the other. Criteria are needed by which suitability of normal schools can be evaluated and these may include:

> presence of specially trained staff, flexibility of organization so that extra training can be given to cope with additional learning difficulties, the adaptation of buildings, the provision of special aids and the emotional climate of the school. (Haskell and Anderson, 1969, p. 52)

Whether the process of integration is complex or simple - it will have to be dealt with. Briggs (1980) in Treatment Centres for Physically Handicapped Children - A Comparative Study surveyed 20 treatment centres located in Canada, the United States, England and Sweden and found that in their statements of objectives "the habilitation or rehabilitation of the handicapped child into his own home and community as soon as possible" was a prominent feature of each statement (p. 221).

Alberta has had compulsory education since 1888 (Race, 1978). It also has, similar to other provinces, special education facilities for multiple handicapped children which are generally attached to a hospital. Although the educational program may be different from province to province, the intent of the program is usually the same: to provide handicapped children an educational opportunity because that is their right under the law. The Alberta School Act (1977) states that:

> every child who has attained the age of six years at school opening date, and who has not attained the age of sixteen years is a pupil . . . and unless excused for any of the reasons mentioned in Section 134 shall attend a school over which a Board has control. (Section 133)

The Special Education Services Branch (1980) of Alberta Education explains Section 133 of the School Act by stating that "it is therefore expected that all children handicapped or otherwise will attend school." Section 134 does list a number of conditions for excusing a child from attending school but in no case can this Act be interpreted to exclude a handicapped child on a permanent basis from school. (p. 2)

Presently, education in Alberta is in transition as both educators and school boards try to determine the implications of integrating handicapped children, even multiple physically handicapped children, into the normal stream of education. The issue of integration was once again brought into focus in the Alberta Supreme Court by Justice O'Byrne in 1978 when he ruled that handicapped children, no matter how severe the impairment, were the educational responsibility of the home school board.

Exceptions to Integration

The Alberta Teachers Association (A.T.A.) in the report of the Task Force on Integration of Handicapped Children into Public Schools (1981) addresses itself to the effect of the court ruling on the regular classroom and classroom teacher.

Since the term "integration" is subject to a wide range of interpretation and understanding, the report defines integration as follows:

> Integration refers to the involvement of handicapped children with normal peers within a school setting, based on individually determined educational needs and in a continuum from the physical location of segregated classes within the regular school to the education of handicapped children in the regular classroom. (p. 34)

Examining the regular classroom the report states that it accepts the fact that the exceptional child should generally be educated in the "least restrictive environment" which is the normal classroom. This is where the majority of educational placements are made and this is also where, to the maximum extent possible, handicapped children should be placed. However, the report cautions that the regular classroom is not appropriate for all handicapped children; the placement must be based on the child's unique needs and his capacity for integration. The report suggests further that the concept of least restrictive environment implies that there be other placement and program alternatives beyond the regular classroom (p. 34).

"It became evident during the course of the research study that the integration of handicapped students is an issue which can elicit strong emotional feelings." So read the study report (1978) presented to the Calgary Board of Education. Questioned were the level of societal responsibility, proper school functioning, professional roles and responsibility of teaching staff. However, teachers saw integration as part of a larger question dealing with professional rights and abilities to influence the composition of their job (p. 45).

Parents generally supported increased opportunities for integrated experiences although they were concerned that the specialized skills and services available in segregated settings should not be diminished (Calgary Board of Education, 1978, p. 9 - 33).

Briggs (1980) saw the process of integration also as a multi-faceted process, which in order to succeed, required the cooperation of all. The author illustrated this when he wrote:

> Integration into the community depends not only on the skill and adaptability of the handicapped but also on the willingness of the community to accept them and make an effort to accommodate them. . . . In addition, the ability to make adequate provision for handicapped children depends a great deal on the willingness of school officials to spend the time, effort and money required to do so. (pp. 41-42)

Because of the new legislation any classroom teacher in Alberta may now find himself with a handicapped student in his classroom. Many teachers would not welcome such a distinct possibility since not all have had experience with exceptional children, nor had preparation in the area of special education. The A.T.A. report (1981) suggests further that:

> There is widespread agreement that inservice education in special education as well as improved consultation service and greater opportunities for specialization at the university level should be provided to all practicing teachers. (p. 36)

Although the mechanism for integration is now in place many aspects of it remain unclear or not answered.

However, Laski (1979) suggests that these changes in the long run will result in better conditions for the disabled. According to Laski:

> The law has always influenced the extent to which disabled persons benefit from advances in knowledge and organizational changes that provide new options in care, education, training, and other habilitation services. (p. 1)

Ten years ago Wolf and Anderson (1969) wrote about the multiple handicapped child and described this child as a problem begging for a solution; as a problem that will not easily go away; as a source of perplexity to be faced by special educators in the future. The authors summed it up when they wrote that:

> The multiply handicapped child has been difficult, uncertain, puzzling, and perplexing problem to special educators; he represents a problem area begging for a solution. Although the solution is years away, the multiply handicapped child is about to become an issue as well as a problem in special education. The increased number of such children and increased demand for services are creating an issue on which special educators will soon be taking affirmitive and negative positions. The issue over this group of children will intensify as more states enact legislation which gives permission to public school districts to establish and maintain special education facilities for children identified as multiply handicapped. (p. 383)

Effects of Integration: An Alberta Case Study

Although integration has been an ongoing concern to Alberta's educators for some time, the school boards were forced into facing the issue in 1978 when Judge O'Byrne handed down an Order of Mandamus under Section 134 of the School Act, ruling for the child: Shelley Carriere.

This multiple physically handicapped child exemplifies the type of child described in the above quotation by Wolf and Anderson (1969). As the following historical account of the process of integrating Shelley Carriere into Chipman Elementary School, Alberta, will illustrate, the atypical child is a "difficult, uncertain, puzzling, and perplexing problem" to all. The process does suggest that the issue of integration will intensify as additional legislation is enacted.

As of August 12, 1978, all Alberta school boards are clearly responsible to provide an education for any and all children with special needs who do not fit into a regular classroom. Mr. Justice O'Byrne of the Alberta Supreme Court issued the Order of Mandamus under a section of the School Act that had never been tested in court, commanding the Lamont County School Board to accept a cerebral palsy child in a wheelchair into its schools.

The child, Shelley Carriere, is confined to a wheelchair and has had her I.Q. conflictingly assessed at between 67 and 96. She was originally discharged from the Glenrose School Hospital because "staff at the hospital decided she was mentally retarded and did not belong in the school serving only the physically handicapped" (Edmonton Journal, August 12, 1978).

In an article entitled "Crippled child's fight for suitable education still on" (Edmonton Journal, November 20, 1978) it stated that Mrs. Carriere is worried about the quality of education her daughter is receiving at the Chipman Elementary School. The teachers are "just guessing and experimenting and feel they are being forced to do something they don't have the background for." Reflecting upon the court decision Mrs. Carriere said that the "only thing we won . . . is the fact she is in school" but "her needs aren't being met".

The court ruling was based upon Section 134 of the School Act which states that a child may be excused from a regular classroom until a school board arranges attendance in a special class or school or arranges education "in any other suitable manner". While this section is somewhat nebulous, the judge ruled "it is sufficiently clear to require the board to comply with it". Further the justice added that the court does not have the jurisdiction to tell the board how to implement the order (Edmonton Journal, August 12, 1978).

Various other reactions to integrating multiple handicapped children into the mainstream came from ranking officials associated with education in Alberta. Mr. Saville, president of the Alberta School Trustees Association (ASTA) suggested more provincial funding was reguired to guarantee every child regardless of his disability, a right to education (December 8, 1978), while Mrs. Anderson, lawyer for the ASTA said that "We're not at the point of accepting an handicapped child into the schools today. We're at the point of what to do with them once they're there" (Edmonton Journal, December 9, 1978).

The fact that educational expenditures for handicapped children was great was echoed by both Mr. Koziak, Minister of Education, and Dr. Dobush, Superintendent of the Lamont County School Board. For Mr. Koziak it was a matter of justifying educational costs for a normal child versus that of a handicapped child (February 17, 1979) whereas Dr. Dobush felt that a small county school system could not afford to absorb additional costs for providing an educational program for handicapped children (March 28, 1979). "How do you justify money spent on this person who is likely not to be productive or give you any returns on your tremendous expenditures?" (Dobush, March 31, 1979).

In April, 1979, an Alberta Education assessment team was sent to Chipman Elementary School at the request of the Lamont County School Board to evaluate Shelley's program. The report, which was made public on June 16, 1979, stated that "Shelley's needs are such that it is very difficult, if not impossible, to meet them in the present school setting". Thus the report made the recommendation that she be transferred from her home school to a special centre for the handicapped such as the Glenrose School Hospital or Elves Memorial Child Development Centre. However, Mrs. Carriere would not consider the alternatives.

Dr. Jean Ruth, a psychologist with Edmonton Public Schools who "is known province-wide for her work with cerebral palsy victims", contradicts an earlier provincial government report and recommends that Shelley remain at Chipman Elementary School "as long as she is happy there." Ruth (Edmonton Journal, October 3, 1979) further stated that since 1966 when the Edmonton and Calgary cerebral palsy clinics closed, there has been no appropriate special education program for "many Shelley's scattered through the province" and it was therefore her recommendation that the province "set up a program for wheelchair-bound children who are, because of their severe handicaps, very slow learners. The I.Q. of this group of children falls between 50 and 75". "Because of the slow rate at which children like Shelly mature, and the inhibiting nature of their handicaps, I.Q. tests given to them in early years are misleading", she added. Ruth further commented that the "stimulating activity that goes on in the classroom, the halls, and the playgrounds of a normal public school and the fact that Shelleys presence at Chipman school teaches the other students to accept and accommodate the handicapped making them better citizens of the community as adults" are factors which migitate against Shelley's placement in a special centre.

One and a half years later, the Lamont County School Board was once again in the news. A transportation problem with Mrs. Carriere prompted her to keep Shelley out of school. Dr. Dobush, superintendent, said the Board had no plans to force Shelley to return to classes since "simple economics just don't allow us to treat Shelley properly. It really taxes us to provide her with even minimal services" (Journal, May 23, 1981). However, Mrs. Carriere appealed to the Alberta Human Rights Commission and with the help of that organization was able to reach a compromise with the Lamont County School Board (Journal, May 28, 1981).

Although legislation is now in place in Alberta which provides handicapped children with their right to an education, a number of questions remain unanswered. The main question may well have been addressed by Judkins (Journal, June 22, 1979) who wrote in a Letter to the Editor that:

> Public education in Alberta is a legal privilege, not a legal right. The central issue is: do all children, regardless of their physical condition or intellectual ability, have the right to the best publicly funded education we are capable of providing? This question has been avoided. Special education has been a matter of policy (politics?) not law. (p. 6)

As a result of the Carriere case proceedings, school boards throughout the province have had to assume increased responsibility for meeting the educational needs of handicapped children. This has resulted in far-ranging implications for all teachers (ATA, 1981, p. 33). The court decision did not delineate the education the child must receive, make provisions for an education in the "least restrictive setting", or guarantee that the child would be educated within the local school system. As a result, the local board is responsible for the educational program of the handicapped child but may elect to send the child to another district should an appropriate program not be available at home.

The activities, materials, and tools used in industrial education programs offer experiences which have been absent in traditional programs for the handicapped. If given a variety of avenues in which to explore educational goals, teachers will find that students can succeed. "Industrial arts and vocational education can fill the void created by years of inappropriate curriculum and programming" for handicapped students (Bender, 1978, p. 63). There is no reason why the industrial arts laboratory could not be part of the "least restrictive environment".

Legislation and the Future

Wall (1976) in "Vocational Education for Special Groups: Retrospectively, Introspectively, Prospectively" suggests that the reason for loose and obscure legislation as these relate to education is due to the fact that one of the most difficult problems encountered in designing programs for the handicapped is that there seems to be no widely accepted criteria for including persons in special group categories. The author continues by stating:

> Lack of criteria poses problems in identifying prospective participants for programs designed to help them. The problem impacts on policy and decision making; it influences the language used in legislation; and it obscures the rules and regulations that are established as a result of legislative interpretations. (p. 17)

It was exactly this problem posed by Wall (1976) that the Canadian Organizing Committee (C.O.C.) was trying to avoid when it released an interim report entitled "Horizons" in October, 1981. The C.O.C. was formed in 1980 to help commemmorate the International Year of Disabled Persons and was a non-governmental, non-profit organization set up for the duration of the year to stimulate and encourage activities directed at keeping the needs of handicapped persons before the people of Canada, thereby promoting public awareness. In its crisp and short report the Committee, which was made up of approximately thirty-five members representing all sectors of Canadian Society (Action, July 1981, p. 2), made only two recommendations:

> 1. That all levels of government in Canada establish and consult with an independent body which can provide them with advice concerning the needs of disabled persons.
>
> 2. That all levels of government in Canada establish an internal mechanism to review and coordinate legislation, policies and programmes pertaining to disabled persons. (Action, October 1981, p. 5)

It is obvious that the need for specialized special education facilities will continue (Kirk, 1972; Dinnage, 1972; Wolf and Anderson, 1969; Warnock, 1978) and although the extent of integration and the evolving of any new forms of education is uncertain the future holds both challenge and opportunity for special schools. Warnock (1978) explains that:

> The challenge consists in the call to adapt to a changing pattern of special education, in which ordinary schools will increasingly feature. We have pointed to the opportunity: whilst there will probably be some decrease in the number of special schools, we see a secure future for them as the main providers of special education for severely and multiply handicapped children in increasingly close collaboration with ordinary schools; as pioneers of new and more effective ways of satisfying children's special needs; and as sustainers of the quality of special education in ordinary schools through the mediation of their indispensable knowledge and expertise. These are vital tasks which carry the prospect of purpose and fulfilment. (Warnock, 1978, p. 149)

Prime justification for places like the Glenrose School Hospital was the fact that many children have needs requiring such services as are offered there. However, Briggs (1980) suggests a couple of other services these treatment centres can provide. These deal with unique training, outreach into the community and research and development, He wrote:

> that such a centre provides a unique opportunity for training and experience for professional people in care and treatment of handicapped children. . . . (Thus it can, brackets mine) carry out sophisticated assessments of handicapped children, providing skilled diagnosis and expert advice to physicians and health agencies.
>
> Along with the trend to admit only the most severely handicapped to the treatment centre and to return even these to their home community as soon as possible there is an increasing emphasis on outreach services . . . . One has only to look closely at the creative, innovative and highly skilled work going on in the majority of centres to realize the potential for first rate assessment and outreach service that the staff could provide.
>
> One further important aspect of the work of an efficiently organized treatment centre is that of experimentation and research. (pp. 44-45)

Reflecting upon the passage of P.L. #94-142, the Education for All Handicapped Children Act which was signed into law in 1975 by then President Gerald Ford, Sullivan (1978) believes that a promising opportunity has been offered to industrial education as it cooperated with special education in identifying and serving handicapped children. They now have access to "free, appropriate and individualized education" by law to meet their specific needs. Industrial education must serve them and maximize the individualized program (p. 45).

Industrial education offers skills and activities which now provide the most promising access for atypical students to meaningful participation in work. Special education offers basic education for participation in society, and a deep and abiding concern to help this population through adulthood (p. 46). Industrial education and special education can be of great benefit to handicapped children.

CHAPTER III

ANALYSIS OF DATA

Chapter two of this report included an historical overview of the development of the industrial arts program at the School Hospital, as well as a review of the literature that emphasized education of the multiple physically handicapped learner. A part of the content of that chapter included research investigations that were related to this study.

This chapter will include an analysis of data that were collected with the research instrument. Some of these data will be organized into tables for ease of presentation and interpretation. Other data will be written in narrative from that will present a description of the industrial arts, pre-vocational and vocational education programs of study that were available for the multiple physically handicapped students in Canada.

It will be recalled from information in chapter one that the questionnaire contained 36 items which were grouped in the following eight categories: School Background Information, Industrial Education, Instructor Background Information, Special Education, Program Objectives, Equipment, and Curriculum. The content of this chapter will be organized into eight sections. Each section will be headed so that it coincides with the sequential heading found on the research instrument.

SCHOOL BACKGROUND INFORMATION

A portion of the research instrument asked that the participant give his name; this was optional, as well as the participant's title; the name of the school where the participant taught; and the province in which the school was located.

Data collected with these questions show that 4 of the participants identified their title as principal and 2 as teachers. Of the 9 participating schools[1] 1 each was located in Alberta, British Columbia, New Brunswick, Nova Scotia, Saskatchewan and 4 were located in Ontario.

SECTION I: SCHOOL BACKGROUND INFORMATION

Question 1 of this section was worded in this way:

1. Name of Superintendent or Director:

This information was requested so that this information could become an integral part of the listing of special schools or hospital schools that offer an educational program for multiple physically handicapped students.

Question 2 was a check-off type of response that asked participants to identify the types of instructional programs that were offered in their schools. Participants were also asked to include other programs that were not included on the check-off list. This question had the following wording:

2. Types of Instructional Programs offered (Check appropriate box(es):

Academic Education ☐
Vocational Education ☐
Pre-Vocational Education ☐
Industrial Arts Education ☐
Other ☐

---

[1] Three of the 9 participants failed to return the questionnaire. However, in their communication with the researcher they did answer a number of the questions found in the questionnaire. These data will be included where applicable in the analysis.

> If there are other programs which do not fit the above classifications, please list these below:

Table 6 was designed to display data collected with this question. Data in this table shows that of the 9 participating schools 9/9 or 100% offered an instructional program that was classified as "Academic Education". Of these 9 schools, 1 or 9% offered "Vocational Education" and 3 other schools or 33% (3/9) of the research population offered a program of "Pre-vocational Education". None of the 9 participating schools offered a program that they considered to be classified as "Industrial Arts" as it was defined for the purpose of this study.

TABLE 6

TYPES OF INSTRUCTIONAL PROGRAMS
OFFERED IN PARTICIPATING SCHOOLS

Type of Program	No. of Schools[1] (N = 9)	Percentage
Academic Education	9	100.0
Vocational Education	1	11.0
Pre-vocational Education	3	33.0
Industrial Arts Education	0	0.0
Other	1	11.0

[1] Several of these 9 schools reported that more than one program was offered.

To determine when each instructional program was first offered in the schools involved in the research question 3 was prepared. This question was a two-part question. The first part asked each participant to:

3. Give the date when each instructional program was first offered:

Date

Academic Education ______________

Vocational Education ______________

Pre-vocational Education ______________

Industrial Arts Education ______________

Home Ec. Education ______________

Others ______________ ______________

While the second part of this question asked for participants to give an explanation why vocational education, pre-vocational education or industrial arts were not a part of the instructional program of their school.

If vocational, pre-vocational industrial arts are not part of your program, please explain:

To present data collected Table 7 was prepared.

Table 7

YEAR WHEN INSTRUCTIONAL PROGRAMS WERE FIRST OFFERED IN RESEARCH SCHOOLS

N = 9

Type of Program Offered	Year of Introduction								
	1	2	3	4	5	6	7	8	9
Academic Education	1972	1962	1965	1950	1939	1898	1949	1951	1959
Vocational Education									
Pre-vocational Education	1976	1962							
Industrial Arts Education									
Home Economics Education			1965	1950					
Others					1971				

Data in this table show that the earliest that Academic Education was first offered in any research school was in 1898 and that 1972 was the most recent date when this program was first offered. In cross-referencing data from Table 7 with data from Table 6 it should be noted that none of the participants gave a year when vocational education became part of the instructional program.

These data also show the youth of these instructional programs in participating schools because only three of the nine schools started their programs of instruction prior to 1950.

In the portion of this question that asked respondents to explain why vocational education, pre-vocational education or industrial arts are not part of the school program, the following explanations were given:

> "Vocational and industrial education courses are provided by transporting students to other facilities" "Carpentry and other related programs are under the jurisdiction of occupational therapy" "A lack of funding" "The objectives of the institution are such that there is no need for industrial education".

SECTION II: INDUSTRIAL EDUCATION

It will be recalled that in addition to each participant receiving a copy of the research questionnaire that individual also received a list of definitions for the terms that were used in the study. Included among these definitions was one for industrial education.

This section of the instrument included seven questions that required a response by each participant.

Question 4 was written to determine the funding agency for the programs that were offered in participating schools. To respond to this question participants simply had to place a check mark in the appropriate box. This question was presented in this manner:

4. How is your program funded? (Check most applicable):

Provincial Funds ☐
Federal Funds ☐
Municipal Funds ☐
Private Funds ☐
Service Club Funds ☐
Other Funds (Specify) ☐

Closely related to question 4 were questions 5 and 6. The former question was structured to identify the source of funding for the programs offered in participating schools. The latter question was written to ask the opinion of participants whether they felt that their programs were adequately funded or not by checking either "Yes" or "No". The second part of this two part question asked each participant for a more thorough explanation of their response.

5. How is your program governed? (Check most applicable):

Provincially ☐
Federally ☐
Municipally ☐
Privately ☐
Service Club ☐
Other ☐

6. In your opinion, is your program adequately funded? Yes __________

No __________

Please explain more fully: ______________________________

____

Because of the relatedness of questions 4, 5 and 6, Table 8 was designed to present data collected with these three questions.

TABLE 8

FUNDING AND GOVERNING AGENCY FOR SPECIAL SCHOOLS PARTICIPATING IN RESEARCH

N = 9

Agency	Funding[1]	%	Adequacy of Funds Yes	Adequacy of Funds No	Governing	%
Provincial	9	100	6	1	8	89
Federal						
Municipal	1	11				
Private	1	11			1	11
Service Club						
Other	1	11	1			

[1] Several of these 9 schools indicated they had more than one agency that provided funds for their school.

Data in this table illustrate that nine of the participating schools indicated that the greater percentage of their funding came from an agency associated with a provincial government. None of these schools were directly funded by either the federal government or a service club. Of these nine schools all indicated that they were governed by an agency associated with a provincial government. Seven of the nine schools or 77% stated that they received adequate funds to support their program.

When asked to explain the adequacy or inadequacy of the funds provided participants gave the following explanations:

> "Ample resources were needed to accommodate the multiple physically handicapped".

"More resources were needed if programs were to be expanded"
"Unsure"

To determine the number of instructors that were employed to teach vocational education, pre-vocational education, industrial arts and other courses where a student learns the psychomotor skills used to cut, shape, form and manipulate a material, question 7 was written. This particular question asked for:

7. Number of instructors in your area employed to teach:

Vocational Education ____________________
Pre-Vocational Education ____________________
Industrial Arts ____________________
Other ____________________
Specify: ______________ ____________________

The response to this question was rather disappointing because only two participants completed this question. Both of these individuals checked other with one specifying that "a mix of creative arts, pre-vocational and industrial arts was taught, while in another case a life-skills program was looked upon as pre-vocational education."

The remaining three questions - 8, 9 and 10 - of this section were closely related to question 7 because all of these questions were concerned with either teachers who taught vocational education, pre-vocational education, or industrial arts or those who taught academic courses. The statement in question 8 asked participants to check-off the program of studies that they taught.

To complete question 9 those involved in the research were asked to fill in a grid showing the courses taught, the enrollment in that particular course, the number of male and female students taught and the age groups.

8. Please check the program of studies that you teach:

Academic Education

Vocational Education

Pre-vocational Education

Industrial Arts

Other

Specify:______________________________________

9. Please list the subjects that you teach and the enrollment in each subject according to age and sex:

Course Taught	Total Enrollment	Number of Male	*Age group(s)	Number of Female	*Age Group(s)
e.g. Woodworking	85	56	2, 3	29	3

*Please use the appropriate number to identify the age groups that you teach:

0	7 - 9
1	10 - 12
2	13 - 15
3	16 - 18
4	19 - 21
5	22 - up

The last question in the section on Industrial Education, question 10 asked for participants to identify the percentage of time they spent teaching in the various subject areas. To do so all these individuals had to do was to list a number in the appropriate line.

Because of the very limited number of participants, 2, who completed these three questions and because of the paucity of research data provided, these data could not be organized into tabular form. This paucity of research data could be partly attributed to the fact that previous data

10. Percentage of your time spent teaching:

Academic Education ____________________%

Vocational Education ____________________%

Pre-vocational Education ____________________%

Industrial Arts Education ____________________%

Other (Specify) ____________________%

provided by participants show that in a number of research schools vocational and industrial education courses were made available to students in other facilities. To avail these students of these learning activities in these facilities the students were transported to these centres.

SECTION III: INSTRUCTOR BACKGROUND INFORMATION

The third section of the research instrument included two questions that were prepared to secure information on the educational preparation of participants to teach the programs in their schools.

The first of these two questions, question 11, was prepared so that participants could identify the institution that was attended to prepare the participants with the skills needed of a teacher.

Question 12 asked each participant who answered the previous question to identify the degree, diploma, or certificates they received from the institution they attended. This question also asked these individuals to indicate the field of study indicated on their degree, diploma, or certificate.

Data collected with questions 11 and 12 were used in preparing Table 9.

TABLE 9

INSTITUTION ATTENDED AND CERTIFICATION OBTAINED BY TEACHERS COMPLETING THE RESEARCH INSTRUMENT

N = 6

Type of Institution	Number of Teachers	Certification		Field of Study*
		Degree	Diploma	
University	6	6	1	
Community College				
Teachers College	5			
Technical Institute	1		1	
Trade School				
Trade College				
Industry				
- at apprenticeship level	1		1	
- at Master's level				
No formal training				
Other (Please specify)				

*Fields of study indicated by respondents were special education (3), home economics (2), English, sociology and elementary education.

SECTION IV: SPECIAL EDUCATION

There were six questions, questions 13, 14, 15, 16, 17 and 18, on the questionnaire that were prepared to secure information on two aspects of special education in participating schools. The first of these was to determine if those involved in the research were required by their employing agency to take university courses in special education in order to teach. The second aspect was to determine the disabilities that were found among the students in the schools where participants taught.

Question 13 was a "Yes - No" type question which was written in this way:

13. As a teacher of physically handicapped students were you required to take any courses in special education (University level) in order to teach:

Yes ☐

No ☐

If yes, please give the minimum number of courses that were required:

Of the 6 participants who responded to this question 5/6 indicated that they were not required to take any special education courses at university. One of the respondents did indicate that special education courses were required of him if he desired to teach physically handicapped children in British Columbia.

Related to the previous question was question 14 which asked participants to check-off the number of courses they had taken to prepare them to teach the physically handicapped learner. On the research instrument the question asked the participants to:

14. Please check the appropriate box to indicate the number of courses you have taken directed at teaching the physically handicapped:

1 - 3 ☐

4 - 6 ☐

7 - 9 ☐

10 - 12 ☐

13 - more ☐

none ☐

To present data collected with this question Table 10 was prepared. Data in this table show that the number of courses participants took ranged from zero to a maximum of six courses.

TABLE 10

NUMBER OF SPECIAL EDUCATION COURSES TAKEN BY PARTICIPATING TEACHERS

N = 3

Number of courses	Number of Teachers
1 - 3	1
4 - 6	1
7 - 9	
10 - 12	
13 - more	
none	1

It is evident from data in Table 10 that only 3 of the 6 participants who elected to respond to question 13 provided an answer to question 14.

To identify the physical disabilities of learners that were found in schools involved in this research, question 15 asked those involved in the study to:

15. Please rank in order of frequency the following disabilities as these pertain to your school:

Cerebral Palsy ☐
Muscular Dystrophy ☐
Developmental Delay ☐
Postoperative ☐
Other ☐

In Table 11 are the data that were collected with this question. These data are combined with data from question 16 which on the research instrument states:

16. Please rank in order of frequency the other disabilities found among your physically handicapped student:

Hard of hearing ☐

Mentally retarded ☐

Non-reader ☐

Aphasic ☐

Sensory handicaps ☐

Others ☐

Please list ______________________________

The disabilities of students identified in question 15 were considered by the researcher to be the primary disability of the learner while the disabilities listed in question 16 were considered to be secondary.

TABLE 11

RANK OF PRIMARY AND SECONDARY DISABILITIES AMONG STUDENT POPULATIONS IN SPECIAL EDUCATION RESEARCH SCHOOLS

N = 6

Disability		School 1	2	3	4	5	6
Primary							
Cerebral Palsy		1	3	1	3	1	1
Muscular Dystrophy		2	4	2	4	3	5
Developmental Delay			1	3	2	2	3
Post Operative				4	1	4	2
Other	RANK	3	2				4
Secondary							
Hard of Hearing		4		3			
Mentally Retarded			4	1		1	2
Non-reader		1	1	4		2	
Aphasic		3	3	5			3
Sensory Handicaps		2	2	2		3	
Other							1

Data in this table show that of the 6 schools that answered question 15, 4/6 or 66%, indicated that the primary disability of the students who attended that school was cerebral palsy. An analysis of these data also show that although 3 of the 6 schools had given a ranking to "other", these schools did not include disabilities that could be placed in that category. Secondary disabilities of the students in these schools were mental retardation and children who were assessed as being non-readers.

Communication with the multiple physically handicapped learner can be difficult because of the number of handicaps that the learner may have. To determine the means used by teachers to communicate with their students enrolled in the special schools involved in this study question 17 asked:

17. Please rank in order of usage the means of communication that you use while teaching:

Oral Communication	☐
Voice Recorder	☐
Bliss Symbols	☐
Spelling Boards	☐
Blackboard	☐
Overhead	☐
Films, Filmstrips, etc.	☐
Written notes	☐
Other (Specify)	☐

____

Table 12 was organized using data collected with Question 17.

TABLE 12

RANK BY PARTICIPANTS OF MEANS OF COMMUNICATING WITH LEARNERS

N = 6

Means of Communicating		School 1	2	3	4	5	6
Oral		2	1	1	1	2	1
Voice Recorder		8		3	2	4	
Bliss Symbols		3		3	8	3	5
Spelling Boards		4		2	7	5	
Blackboard	RANK	1	2	1	3	1	4
Overhead		5		2	4	7	
Film/Filmstrip		6		1	5	6	
Written Notes		7	4	2	6		3
Other			3				2

It is evident from data in this table that the oral communication was ranked first by over 65% (66.6%) of the participants. The next highest rank means of communicating with students in participating schools was the blackboard. Three of the six participants or 50% indicated they use this as a means of communicating with their students. The third highest means of communicating that participants used to communicate with their learners was written notes. One research participant added a note of explanation to each ranking given. To the category "other" this participant wrote "that the means of communication varies from student to student".

In question 18 participants were asked:

18. How much time per week does the learner spend in industrial education:

Senior high ____________ minutes

Junior high ____________ minutes

Elementary ____________ minutes

Prior to providing a response to this question there were a number of participants who crossed out the words "industrial education" and substituted the words "pre-vocational education". These participants indicated that these students spent between 1 to 4 hours per week in a pre-vocational learning environment. Respondents also indicated that not all students were eligible to take industrial education courses with remarks such as "some suitable students only" and "only some patients are involved".

SECTION V: PROGRAM OBJECTIVES

Participants were asked in question 19 to list in order of priority the objectives for their program.

19. Please identify the objectives for your program by numbering the appropriate box(es) in order of priority. (Start with #1 as highest priority).

Skill development ☐

Personal development ☐

Social development ☐

Saleable skills ☐

Work habits ☐

Work attitudes ☐

Other (Specify) ☐

____

The responses in this question were used to develop the content in Table 13.

TABLE 13

RANK OF PROGRAM OBJECTIVES BY
RESEARCH PARTICIPANTS IN SPECIAL SCHOOLS FOR
PHYSICALLY HANDICAPPED

N = 6

Program Objective		School					
		1	2	3	4	5	6
Skill Development	RANK	3	5	5	5	6	3
Personal Development		2	2	2	3	3	1
Social Development		1	3	1	4	2	2
Saleable Skill			6			5	6
Work Habits		4	4	4	1	4	5
Attitudes		5	1	3	2	1	4
Other							

The data in this table show that the highest rank given to the program objectives listed was for the objective "social development". The program objective that received the lowest rank was the saleable skill objective. These data also show only one participant ranking "work habits" first while the remaining five participants gave it a rank of either 4 or 5.

SECTION VI: EQUIPMENT

This section of the research instrument consisted of five questions that had to do with equipment, equipment modification, and equipment operation by students in industrial education courses in schools that were involved in the research.

Question 20 was the first question in this section and it asked:

20. Students in industrial education courses work with:

a) handtools only ☐
b) machine tools when properly qualified ☐
c) all hand tools and machine tools that they are capable of safely operating ☐

How do students qualify to operate electric equipment as in b) and c) above:

____

In retrospect this was a poorly written question because instead of forcing the respondent to provide one answer those who responded to this question checked all three possible responses. To qualify their responses, participants indicated that in the school a student is judged capable to operate electric machine tools and hand tools by either the teacher or an occupational therapist.

There are two schools of thought concerning whether or not equipment should be modified for physically handicapped students. One school of thought is that equipment should be modified so that the student can operate it. The other school of thought is diametrically opposite to the first school of thought. Those who subscribe to the second school of thought take the position that equipment should not be modified because modification goes beyond normalization.

To determine how participants felt about modifying equipment question 21 asked:

21. Do you feel that equipment should be modified/adapted so that physically handicapped students can operate it?

Yes ☐

No ☐

Give a reason for your answer: ______________________________
____

Of the 5 participants who answered this question 4 were of the opinion that equipment used in industrial education courses with physically handicapped students should be modified to meet the needs of these students. Below are some of the reasons given by respondents who answered the first part of this question:

"If adaptations increase proficiency or if safety deficits due to physical limitations may be minimized."
"Yes, but only if these adaptations are absolutely necessary."
"Adaptive devices to eat, type, walk, use hands, stand, move around are necessary. Buildings are adapted - cities! It follows that industrial arts equipment MUST be."

To determine if equipment in participating schools was used as it arrived from the manufacturer, or if modifications had been made to the equipment by applying adaptive devices question 22 was written.

22. Equipment in your shop (laboratory) is used:

a) as it was originally supplied ☐

b) with modifications ☐

c) in combination with adaptive equipment (splints, etc.) ☐

An analysis of the responses on the returned questionnaires shows that this question may have been poorly worded because most of the participants checked all three boxes instead of checking a single box.

However, an inference could be drawn from these data. The inference is that some of the equipment used by teachers in participating schools had not been modified because it was being used as originally supplied; while other pieces of equipment had been modified to accommodate the learner; and other pieces of equipment were being used with adaptive devices such as splints.

Closely related to question 22 was question 23 which was worded to identify the person who was responsible for making equipment modifications in the research schools. The question asked:

23. If your equipment is modified, who made these modifications:

a) you, or another instructor ☐
b) a person specifically hired for this ☐
c) an occupational therapist, etc. ☐
d) other, please explain ☐

____

Data collected with this question show that equipment modifications were the responsibility of the teacher who was teaching the class where these modifications had to be made. In some of the research schools equipment modifications were done by either an occupational therapist or by a special person on staff.

The last question in this section, question 24 asked:

24. Please list the percentage of your time overall that is spent teaching theory __________ and practical ____________________.

In retrospect this question was misplaced in sequence because it deals with implementing curriculum and it is not related to equipment. This question should have followed question 32.

SECTION VII: CURRICULUM

The last section of the research instrument contained twelve questions that were directed at the implementation of curriculum in participating schools.

The first question in this section, question 25, was a three part question with two of the parts requiring a "Yes - No" response and the third part of the question requiring a constructed response.

25. Have curriculum guides been developed for use in your program:

Yes ☐

No ☐

Are you required to use these curriculum guides:

Yes ☐

No ☐

If yes, where did these curriculum guides originate:

Data collected with this question show that 2/6 participants indicated that curriculum quides had not been developed for use in their area but another 2/6 participants did indicate the contrary, that curriculum guides had been developed for use in their program but these originated with the provincial Department of Education and in England. However, respondents did not indicate whether the guide needed to be used in the participating schools.

In designing the research instrument it was considered important to include a question that would ask if curriculum guides had been developed in conjunction with academic teachers of the school. This was considered important because one of the objectives for industrial arts is to reinforce the academic disciplines. The concepts that need reinforcement in industrial arts could be determined by an academic teacher in conjunction with the industrial arts teacher. Question 26 asked:

26. Were these curriculum guides developed in conjunction with the academic program in your school:

Yes ☐

No ☐

Participant responses to this question were minimal and those who did respond did so in the negative. Like the analysis of the previous question the negative reply could indicate that curriculum quides were non-existent in the schools of those who elected to respond to this question.

27. Does the academic teacher work on related subject matter pertaining to the course you teach:

Yes ☐

No ☐

Of the 4 participants who answered this question 3 or 75% responded in the affirmative when they checked "Yes". This meant that academic teachers in their schools did work on related subject matter that was related to the course they were teaching.

The next question on the research questionnaire was written so that the researcher could secure information on the communication lines that exist between the academic department and the industrial education department.

28. Do you believe that there is adequate communication between the academic department and your department:

Yes ☐

No ☐

Answering question 28, 4/4 participants responded to this question in the affirmative which could indicate that fellow teachers in the schools where participants taught did communicate with them, thus adhering to the team approach to treatment and/or education.

To the question on career education of the 6 participants, 3/6 or 50% checked the "Yes" block and 1/6 or 16% checked the "No" block.

29. Is there a career education program offered to the students at your school:

Yes ☐

No ☐

Question 30 required that the participant provide a constructed response to indicate the type of changes that could be made to make the program in the participants' school more effective. This question asked for this information in this way:

30. What changes would you like to see made to make your program more effective: (Describe as briefly as possible).

Some of the response to this question were:

"Not enough funding to buy expensive equipment to get students pre-vocationally ready."
"There's need for a better inter-agency to coordinate employment placement."
"Need for sheltered industry."
"What occupations should we prepare our students for?"
"We need larger facilities to accommodate more students in more diverse areas."
"Development of pre-vocational education aspects."
"Special schools and treatment centers tend to work in a vacuum. There is a need for a continuum of services."
"There's a need for good transportation."
"Greater level of acceptance/accessibility."

Those involved in the research were asked to comment on how they felt about the provision for industrial education programs for learners who were physically handicapped in question 31.

31. Please comment how you feel about providing industrial education programs to physically handicapped students:

____

Below are verbatim comments that were given by participants to this question.

"Our students are integrated for industrial education courses. However, scheduled bussing is very difficult to arrange."
"I am supportive of such programs provided that students have achieved an adequate level of pre-vocational, life skill and social performance to ensure some degree of success."
"Vocational programs would be beneficial."
"Very positive, but not as a separate entity. Normalization means all encompassing awareness of all areas of life."
"I feel it is important if the setting is appropriate."
"In our setting, very few patients are physically capable of being involved but wherever they can, they are encouraged to do so."

Question 32 was a two part question. The first part required a "Yes-No" answer with the second part requiring the participant to justify the answer given with a constructed response. This question asked:

32. Do you feel that industrial education courses are effective and useful for physically handicapped students:

Yes ☐

No ☐

Please explain: ______________________________

Of the 5 participants who answered the first part of this question 4 did so in the affirmative when they checked "Yes" as their answer. These participants as well as those who checked "No" provided the following explanations for selecting the choice of response they made. These are verbatim quotes taken direct from the returned questionnaire.

"A most important mandate considering the types of students now being admitted."
"Courses must be realistic and appropriate to the students' abilities."
"They may provide hobby activities for some students and later perhaps an income supplement."
"They provide added enrichment and vocational experience."

To determine if those involved in the research observed any change in the type of student that was being admitted to their schools question

33 was written. This question was a "Yes-No" check-off type question with space provided for the participant to elaborate on the response they checked.

33. Has there been a change in the type of student you teach due to:

	Yes	No
Declining enrollment	☐	☐
Mainstreaming	☐	☐
Earlier identification of handicaps	☐	☐
Other	☐	☐

Please elaborate ______________________________

Data collected with question 33 were used to assemble Table 14.

TABLE 14

REASONS FOR CHANGE FOR TYPE OF STUDENT

N = 9

Reasons	Number of Schools	% of School
Declining enrolments	1	11.1
Mainstreaming	3	33.3
Earlier Identification of Handicaps	4	44.4
Other	1	11.1
Total	9	99.9[1]

[1] Less than 100% due to rounding.

Data in this table show that "earlier identification of handicaps" was the main reason why there had been a change in the type of student taught by participants in the schools where they were employed. A number of participants elected to elaborate on their "Yes-No" response. The elaborations that were made include the following quotations:

> "Fewer referrals . . . likely due to the decline of congenital defects and the increased service provided by local and regional schools, hospitals and rehabilitation centres."
> "Student abilities vary from time to time depending on admissions."
> "Change in admission policies."
> "Change relates to increased percentage being more physically involved."

Question 34 was directly related to the previous question because it asked participants to give a brief explanation on how the program was changed to accommodate different students to the schools where they taught. This question asked those involved in the research:

34. Briefly describe any changes in your program which have been necessitated by the previous question:

____

It is evident from the descriptions that were given that there were those who could not determine the changes that these students had on their program when they wrote:

> "More academics; less academics."
> "More theory; less theory."

There were other participants who provided a more positive response when they elaborated in this way:

> "To build self-esteem."
> "To increase basic communication (life skills)."
> "More programs in Blissymbols."

To secure a complete picture of other members of the team that provide both formal and informal teaching to students enrolled in special schools that were involved in this study question 35 was written. This question was prepared as a two part question with the first part a "Yes-No" question and the second part requiring a constructed response for those who responded in the affirmative. This question was phrased in this way:

35. Are there any other non-teaching personnel (e.g. recreational therapist, occupational therapist, etc.) involved in making your students aware of the world of work:

Yes ☐

No ☐

If "yes", please identify the staff who have such responsibility and describe how they are involved in making the student aware of the world of work:

____

There were 6 participants who answered the first part of this question and of these 6/6 or 100% checked "Yes" indicating that there are other non-teaching personnel in their schools who are making the physically handicapped students aware of the world of work. Staff identified by these respondents as being involved with this responsibility were: Occupational therapists, Physio-therapists, Childcare Workers, Recreational therapists, Speech Pathologists, Social Workers, Psychologists and Teachers. Some of the means which were used to accomplish the responsibility of making learners aware of the world of work were: field trips, work study programs in the kitchen and laundry, discussion groups, counselling sessions, and a leisure education program. These answers indicated that respondents were members of multi-discipline treatment teams.

The last question on the research instrument, question 36, was an open-ended question that asked those responsible for completing the instrument to comment or elaborate on any phase of their program that was not included in the sequence of questions of the instrument. The phrasing of this question very succinctly asked:

36. Please use this space for comments or elaboration on any aspect of your program that may have been overlooked on this questionnaire.

A number of participants made comments about the educational programs, use of the team approach and student populations found in participating special schools. These comments were:

> "We are in need of a general living skills/pre-vocational program - nothing specific. Something that's very practical and gives information."
>
> "Teachers and other professionals work together, using a team treatment approach, to treat, educate, rehabilitate the whole child."
>
> "I stress social and personal development . . . . I am really trying to establish a more positive self-image - so many of our students have failed so frequently they have little hope for success.

THE PROVINCE OF QUEBEC

Methodology in the first chapter described the process that was used to determine which special schools in the province of Quebec could be included in the research population. A total of 13 questionnaires with covering letter were mailed to the identified special schools and of this number 10/13 or 78% of the questionnaires were completed and returned. The questionnaires consisted primarily of five parts, replies to which are reflected in the following discussion and tabulations.

The first part of the questionnaire requested the name of the participant, the position the participant occupied, the name and the address of the school. Data collected show that 8 of the participants identified their position as director and 1 each as principal and vice-principal.

Question 1 of the questionnaire was a check-off type of question that asked participants to identify the level at which special education instruction was provided at their school. Participants were also able to include descriptions of other kinds of instruction not listed on the check-off list. This question had the following wording[1]:

1. This school provides special education instruction at the

elementary level ☐
junior high level ☐
senior high level ☐
other, please describe ☐

Table 15 was prepared to show the tabulations of data collected with the above question. Data in this table indicate that of the 10 participating schools 10/10 or 100% offered instruction at the elementary school level. Of these 10 schools 7/10 or 70% offered a program at the secondary school level and 2/10 or 20% of the schools offered as well instruction at the "other" levels.

One respondent described these "other" levels as "Education beyond school years 16 to 21" while another respondent indicated that his school provides special education instruction at the pre-school level when he wrote: "pre-school 3 - 5 years."

TABLE 15

LEVEL OF INSTRUCTION OFFERED IN TEN SPECIAL SCHOOLS IN QUEBEC

N = 10

Level of Instruction	Number of Special Schools										
	1	2	3	4	5	6	7	8	9	10	%
Elementary	x	x	x	x	x	x	x	x	x	x	100
Secondary	x		x	x			x	x	x	x	70
Other	x		x								20

---

[1] For this analysis the original questions as phrased in English will be used. The reader is asked to turn to Appendix A, page 249, for the French version of these questions.

To ascertain what type of educational program was offered at these schools, question 2 asked respondents to check off the choice most applicable to their programs. The three choices were: academic courses, life skill development courses, and vocational training courses. Question 2 was worded in this way:

2. The education program consists of:

academic courses ☐
living skill development courses ☐
vocational training courses ☐

Data gathered by this question is tabulated in Table 16. These data show that in 9/10 or 90% of the identified special education schools in Quebec the program of instruction was academically oriented with living skill development taught in 3/10 or 30% of these schools with one from the Quebec group reporting vocational training courses as one of the programs.

TABLE 16

TYPES OF EDUCATIONAL PROGRAMS OFFERED IN TEN SPECIAL SCHOOLS IN QUEBEC

N = 10

Type of Program	Number of Special Schools										
	1	2	3	4	5	6	7	8	9	10	%
Academic		x	x	x	x	x	x	x	x	x	90
Living Skills Development	x		x	x							30
Vocational Training	x										10

To determine if industrial arts was one of the subjects taught in these schools question 3 was written. This question asked:

3. Do you offer instruction in industrial arts?

Tabulation of data generated by question 3 are shown in Table 17 which indicate that out of 9 schools who responded to this question 8/9 gave a negative response when they checked "No". This meant they did not offer industrial arts as part of their school program.

TABLE 17

INDUSTRIAL ARTS OFFERED IN TEN SPECIAL SCHOOLS

N = 10

Industrial Arts offered	Number of Special Schools 1	2	3	4	5	6	7	8	9	10
Yes			x							
No	x	x		x	x	x	x	x	x	x

Question 4 on the Quebec instrument had the following wording:

4. Are the majority of your students physically handicapped?

This was a crucial question since this research dealt with educational programming in Canada for multiple physically handicapped students. However, all 10 respondents answered question 4 in the negative.

The last question of the questionnaire asked respondents to give any other comments which might be helpful to the researcher. Two comments offered by respondents enlarged upon the type of students at those schools. These comments were:

> "The students have severe learning difficulties as well as behaviour problems."
>
> "We take students normally enrolled in regular or enrichment classes who have had academic failures due to emotional problems."

CHAPTER IV

SUMMARY, OBSERVATIONS, CONCLUSIONS, RECOMMENDATIONS, AND A DESCRIPTION OF SPECIAL SCHOOLS IN CANADA FOR MULTIPLE PHYSICALLY HANDICAPPED LEARNERS

Reviewing the chapters that comprise this research report, Chapter I gives a brief overview and description of the purpose of the study and the methodology that was used to bring this study to its completion. Chapter II presented information on the evolution and establishment of the Glenrose School Hospital as well as a survey of the literature and research investigations that were related to the current study. Chapter III contained an analysis of the data that were collected with the research questionnaire that was designed for this research study.

The final chapter of this thesis, Chapter IV, is divided into four parts with the first part comprising a summary of the research methodology. The second part includes observations and conclusions stemming from the findings of the study. The third and final sections include recommendations for those who wish to conduct research on the topic of this study and includes as well a description of special schools in Canada which offer educational programs for multiple physically handicapped learners.

SUMMARY

The Problem

The major objective of this research study was to provide a descriptive analysis of vocational, pre-vocational and industrial arts programs in treatment centres and special schools for the multiple physically handicapped in Canada.

In addition to the major objective, the study sought to accomplish the following supporting objectives: to determine the types of instructional programs that are available to physically handicapped students in the schools that are part of this study; to determine the agencies which provide funds for the schools for physically handicapped across Canada; to identify the industrial education courses that are part of the students' educational programs in participating schools; to determine the kinds of educational preparation that teachers of the physically handicapped have and who are engaged in teaching industrial education; and, to identify the kinds of equipment modifications that were made to machine tools that would permit physically handicapped students to operate these tools.

The Population

The population of this study included 23 treatment centres and/or special schools as well as 13 special schools in the province of Quebec which were associated with the education of physically handicapped students. The population was identified through consultation with personnel from various provincial government agencies as well as from a search of the professional literature written for individuals who work with the multiple physically handicapped learner.

Related Literature

A review of the research literature indicated that there were no other studies undertaken in Canada that were directly related to this research. A comparative study undertaken by a Canadian researcher on different treatment centres for physically handicapped children in

Canada, the United States and Europe was found to contain names of contact persons, addresses and a brief description of some centres which were included in the population of that study.

However, this review revealed that there was a very limited amount of professional literature pertaining to vocational, pre-vocational and industrial arts programming for physically handicapped students in special education schools.

Methodology

A questionnaire was used as the research instrument to collect data for this study. Prior to using the research instrument in the major study, the questionnaire was reviewed by two qualified educators of the physically handicapped, the thesis supervisor, and a specialist in research instrument design.

The research instrument was pretested in a pilot study at the Glenrose School Hospital in Edmonton. Pilot study participants included 5 teachers who were familiar with the industrial education program at the Hospital. As a result of that review and the results of the pilot study, changes were made in the wording of questions to help clarify the intent of these questions before the research questionnaire was used in the major study.

Provincial treatment centres and special schools for physically handicapped children were identified by direct contact with directors of special education services in each of the provinces and territories of Canada. These contacts, excluding the province of Quebec, yielded a listing of 14 centres.

Data for the study were collected through the use of a questionnaire which was mailed to the identified population. Each research instrument was accompanied by a covering letter directed to the principal/director of the school as well as a letter directed to the teacher who would complete the questionnaire. In addition to these two letters, attached to the instrument, were two information sheets, one to explain related terminology and the other to give an overview of the Industrial Education program at the Glenrose School Hospital.

A total of 14 questionnaires were mailed and 6/14 schools responded for a 43% return. In addition, 6 schools replied by letter answering therein a number of the questions which appeared in the research instrument. This brought the total number of responses to 12/14 for a 86% return. The data included in these letters were analyzed and were used in organizing relevant tables of the research.

The province of Quebec was included in the research but was treated as a separate research population. The reason why Quebec was treated as a separate population was that the researcher had been informed that there were 13 schools in that province that provided special educational services for atypical children including the physically handicapped learner. To ascertain whether these schools could be included in the population of this study, a mini-questionnaire was prepared, examined by the thesis advisor and mailed to each of the 13 identified schools.

All correspondence to the schools in Quebec was first written in English, translated into French and then back translated into English. This approach was used to determine the accuracy of the first translation.

The data recorded on both questionnaires were analyzed, summarized and tabulated manually in order to achieve the research objective.

Findings

Data collected with the research instrument revealed the following major findings. Section numbers precede each major finding to provide ease of referencing with the research questionnaire.

Section 1 School background information. All of the schools which responded stated that an academic program was provided for physically handicapped students. In addition the majority of centres had also developed specialized educational programs to meet the needs of students admitted to their schools. At one of the participating schools the academic program for physically handicapped children was first introduced in 1898.

At the time of the study industrial education was not part of any educational program among the research population, although this has not always been the case in the past. A number of respondents indicated that when the study was conducted psychomotor skill development was the domain of the occupational therapist.

Section 2 Industrial education. The 10 respondents indicated that major financing and program control were provided by the provincial governments where participating schools were located. These participants indicated that the funding of their program was adequate.

Section 3 Instructor background information. Data generated from this section of the questionnaire indicated that teachers who were employed to teach physically handicapped students were well qualified and that 6/6 received their training at university, teacher's college, technical institutes or industry. Many of the respondents indicated that they had training beyond a bachelor's degree.

Section 4 Special education. It was indicated by respondents that there was no concensus across Canada regarding the taking of special education courses nor the number of such courses to be taken in order to teach physically handicapped children in participating schools.

Cerebral palsy, developmental delays, and muscular dystrophy were the three top ranked student primary disabilities while non-reader, sensory handicaps, and emotional disorders were the predominant secondary disabilities of children that those involved in the study taught.

The predominant forms of communication used by teachers to communicate with their students were verbal, blackboard, and written notes.

Section 5 Program objectives. Personal development, social development and the development of attitudes were seen by respondents as major program objectives for educational programs for the physically handicapped child.

Section 6 Equipment. Research participants indicated that control for the handicapped learner to operate electrically controlled equipment should rest with the teacher or therapist in charge of the equipment. It was also reported that equipment modifications were made by either the person responsible for teaching the course, by an occupational therapist, or a special person on staff.

The ratio of "practical/theory" time that the handicapped learner had, averaged about six to one, thus 85% practical and 15% theoretical. These data were based upon the replies by three respondents, two of which stated 80% practical/20% theoretical, and one respondent, who wrote 90% practical/10% theoretical.

Section 7 Curriculum. Curriculum guides for pre-vocational, vocational and industrial arts programs for physically handicapped students in participating schools had not been developed in that school. Curriculum guides that were available in some of the research schools originated either in a provincial Department of Education or a foreign nation.

Participants in some of the research schools indicated that students in their schools are bussed to other educational institutions for the industrial education portion of their school work. This can be partially attributed to the fact that handicapping conditions are being identified earlier and in some schools there had been a change in administration policies.

CONCLUSIONS

The Industrial Education program at the Glenrose School Hospital is unique in Canada because it uses the multi-activity program approach, and follows curriculum guides prescribed for non-handicapped students in Alberta.

Some of the research participants perceived industrial education as being effective and useful for physically handicapped students. However, they felt that these courses should be realistic and appropriate to the student abilities.

The school hospitals, often called hospital schools, serve multiple physically handicapped children who have a variety of primary as well as secondary disabilities. Participants identified cerebral palsy as the highest ranking primary disability among their physically handicapped students. Mental retardation was ranked as the highest secondary disability of physically handicapped learners in the participating schools.

All educational programs in school hospitals involved in this research were funded by either provincial sources, community or private agencies. Research participants indicated that the funds provided for their school were considered adequate.

RECOMMENDATIONS

The findings and conclusions of this study have potential for teacher education, industrial education teacher educators and school boards.

Teacher Education

From the findings of the study it is apparent that a high level of integration of multiple physically handicapped children into community schools is taking place across Canada. These children, when integrated, must be educated in the "least restrictive environment" which often includes industrial education courses.

This necessitates that industrial education teachers receive adequate training if they are to work with students who are physically handicapped so that these students can be provided with a meaningful and enriching educational experience. Thus universities and colleges which offer teacher education must ensure that graduates in industrial education have completed the necessary courses that will provide these graduates with the necessary qualifications and skills needed for them to promote effective integration.

Industrial Education Teacher Educators

The issue of integrating physically handicapped students into community schools will place additional demands upon industrial education teacher educators. As a result of such integration these teacher educators will have to change their programs of study so that industrial arts, vocational education, and business education pre-service teachers receive additional course work in educational psychology, particularly courses that have to do with psychology of exceptionality. Pre-service industrial education teachers will have to take courses that include not only medical terminology, but mechanics of body movement so that they can use the information from these courses to assist them in modifying equipment and when working with other members of the treatment team.

Other concerns that these educators must be prepared to face include: assigning student teachers for field experience to school hospitals or special schools so that these students can synthesize their professional education in teaching handicapped children, and learn how to make equipment modifications to meet the needs of a particular learner or group of learners.

School Boards

School boards will have to become acutely aware of the need to study the implications of integrating multiple physically handicapped students into regular industrial education classes. A number of salient questions will need to be addressed by school board administrators before these students are placed in community schools with other learners. Some of the questions that need to be considered are: What effect, if any, will the placement of a physically handicapped learner have on the learning ability of other students? How will the integration of a physically handicapped student into a classroom affect the way the instructional content is delivered? What type of concessions will the teacher have to make in order to accommodate the handicapped learner? Will these concessions be detrimental to the other students in the class, to other students in the school? Will the placement of a handicapped student place extra demands and attention on the part of the teacher who has not been educated to work with the atypical child?

Teachers will have to be given release time to attend in-service seminars or university classes to learn how to teach the atypical child and how to relate to this kind of learner.

School boards will have to find monies that will permit teachers of the physically handicapped learner to subscribe to professional journals, to join professional associations, and to attend conferences that deal with teaching the physically handicapped child.

Recommendations for further study

The main focus of this study was to provide a description of vocational, pre-vocational and industrial arts programs in treatment centres and special schools for multiple physically handicapped children in Canada, and to provide a listing and description of these institutions. However, the research instrument was designed to be used by participants who were industrial educators and not by regular teachers. Since there were no industrial educators per se in the participating schools, data gathered from those who did answer the questionnaire was minimal. It is recommended that this study be replicated with the use of a revised instrument to determine specifically the breadth of educational programming existing in school hospitals.

Two specific questions that also ought to be included in the replicative study are: "length of patient stay" and "what is the intent of the educational program?" The rationale for asking these questions is that the kind of educational program offered is influenced significantly by the types of students admitted to the institution which is usually reflected in the length of stay of these students. A longer list of disabilities and definitions, primarily medical, should be included in the new study.

A second recommendation originates from the findings and conclusions of this study which indicate that many multiple physically handicapped children are being integrated into public schools. A follow-up study of these students should be conducted to determine to what extent integration of these atypical students is occurring in industrial education courses in the major population centres of the country. Some of the research questions that might be asked if such a study were conducted are: What factors make for successful placement? What types of support systems are available to integrated students and to teachers? What implications does integration have on curriculum or legislation for integrating handicapped children into community schools?

However, one of the greatest concerns expressed in the literature was the need, not just for multiple physically handicapped students but for all physically handicapped children, to promote and expand post-school activities for these atypical students. This concern was first expressed in Alberta by Day (1954) in the Cerebral Palsy Clinic report and later by McPhail (1972) in the preliminary report on the Glenrose School Hospital. This problem warrants further research.

It is recommended that a survey type of study be commenced of a number of countries in the Western world to determine if this problem is commonplace. What vocational and avocational activities can be introduced into the Edmonton area for young physically handicapped adults? Are there innovative programs operating which have given these young people a productive post-school life?

A DESCRIPTION OF SPECIAL SCHOOLS IN CANADA FOR MULTIPLE PHYSICALLY HANDICAPPED LEARNERS

This section of the chapter gives a brief description of the special schools which provide educational programs to multiple physically handicapped learners in Canada. The schools are listed by province which are in alphabetical order.

In addition, reference is made under each provincial heading to current legislation in that province as it pertains to the exceptional child.

Alberta

1. Dr. Gordon Townsend School
   Alberta Children's Hospital
   1820 Richmond Road
   Calgary, Alberta T2T 5C7

Executive Director: Mrs. R. Innis

Principal: Mr. G. Bullivant

School established: 1972

Academic program established: 1972

Industrial Education program established: none

Funding agency: Government of Alberta

Governing agency: Government of Alberta

Program: Education is provided on a contractual basis with the provincial government by the Calgary Public School Board and its teachers.

2. Glenrose School Hospital
   10230 - 111 Avenue
   Edmonton, Alberta T5G 0B7

Executive Assistant: Miss J. Swan

Principal: Mr. H. H. Unrau

School established: 1966

Academic program established: 1966

Industrial education program established: 1968

Funding agency: Government of Alberta

Governing agency: Government of Alberta

Program: The educational program is provided by teachers from the Edmonton Public School Board under contract to the provincial government.

Alberta legislation: Authority for providing educational services for physically handicapped children comes from the Alberta School Act, Section 133, which states that all children shall have access to schooling. In August, 1978 the Alberta Supreme Court ruled that handicapped children must be educated in the least restrictive environment in their home school district. The order handed down by Justice O'Byrne was an interpretation of existing legislation, thus no specific legislation per se exists for atypical children in Alberta.

British Columbia

1. G. F Strong Rehabilitation Centre
   4255 Laurel Street
   Vancouver, B.C. V5Z 2G9

Executive Director: Mr. E. Denham

School established: 1950

Academic program established: 1950

Industrial education program established: none

Funding agency: Government of British Columbia

Governing agency: Government of British Columbia

2. G. R. Pearkes Clinic for Handicapped Children
   3970 Haro Road
   Victoria, British Columbia V8N 4A9

Contact: Mr. Deryk Thomson

School Established:

Academic program established:

Industrial education program established:

Funding Agency:

Governing Agency:

British Columbia legislation: No specific legislation exists for handicapped children in British Columbia. It was pointed out by the Director of Special Education Services, British Columbia, that:

> The Ministry of Education's Special Education Guidelines recommend that most physically disabled children be fully integrated with adaptations made to school facilities to accommodate their handicap. Educational programs are provided in the child's neighborhood school rather than in specialized settings. (Personal communication, October, 1981)

Manitoba

1. Children's Rehabilitation Centre
633 Wellington Crescent
Winnipeg, Manitoba R3M 0A8

Contact: Mr. D. W. Steward

School established: 1949

Academic program established: 1949

Industrial education program established: none

Funding agency: Government of Manitoba (since 1977)

Governing agency: Government of Manitoba (since 1977)

Manitoba legislation: In Manitoba The Public School Act (1980) mandates the provision of education to all children according to Sections 41(4), 259 and 41(5). The handicapped child is not distinguished from the normal child in this Act. Correspondence from the Assistant Coordinator of Child Development & Support Services, Department of Education, pointed out that:

> In Manitoba mainstreaming or integration is not incorporated in the Public Schools Act. However, the Department of Education actively supports a policy of educational place-

> ment in the least restrictive educational environment. We are presently developing a policy manual which will in detail deal with placement, placement appeal, etc. (Personal correspondence, March, 1982)

The researcher attempted to make contact with Grant Park High School in Winnipeg, Manitoba because he was advised by Manitoba Education that a "considerable" number of physically handicapped students were attending there. However, no reply was received from the school. The integrated high school is:

Grant Park High School
450 Nathaniel Street
Winnipeg, Manitoba R3M 3E3

Principal: Mr. I. Sera

New Brunswick

Dr. William R. Roberts Hospital School
P.O. Box 3280, Postal Station B
Saint John, NB E3M 4X8

Education & Training Supervisor: Mr. W. E. McCann

School established: 1965

Academic program established: 1965

Pre-vocational program established: 1965

Funding agency: Government of New Brunswick

Governing agency: Government of New Brunswick

New Brunswick legislation: On October 22, 1981, the Director of the Special Education Services Branch, Department of Education, indicated to the researcher that in most instances "these students are accommodated in our regular programs where teachers make the necessary adaptations in the curriculum". Multiple orthopedically handicapped children "are taught in an educational setting and not a medical one".

This correspondence also pointed out that senior high school classes containing physically handicapped children are enrolled in industrial arts programs. But this "program is new and needs considerable adaptation and accommodation to meet the special needs" of these atypical students. Later, the director indicated:

> The Province of New Brunswick's School Act specifies that the Minister of Education will provide free schooling to all persons between the ages of six and twenty years (Section 5[1] of the School Act).
>
> In order to carry out this legal obligation, policies have been established relating to the provisions of special transportation, extra personnel to assist the physically handicapped, and building accessibility. (Personal communication, March, 1982)

A rehabilitation centre is maintained by the government for children in need of intensive therapy but this institution does not have an industrial education component as part of its educational program:

Forest Hill Rehabilitation Centre
180 Woodbridge Street
Fredericton, N.B. E3B 4R3

Director: Mr. B. J. Tibbet

Newfoundland & Labrador

Details on educational services provided for physically handicapped children in this province were not made available to the researcher by:

Ms. P. Kaufman
Supervisor, Special Education
Department of Education
P.O. Box 4750
St. John, Newfoundland A1C 5T7

Northwest Territories

There are no special schools in the territories. Children who are atypical are either integrated at home or sent to centres in Alberta where facilities are available for specialized services.

Nova Scotia

Izaak Walton Killam Hospital for Children
5850 University Avenue
Halifax, Nova Scotia B3J 2S9

Director, Child Life Department: Ms. L. Skinner

School established: 1939

Academic program established: 1939

Industrial education program established: none

Funding agency: Government of Nova Scotia

Governing agency: Government of Nova Scotia

Nova Scotia legislation: The Education Act of Nova Scotia places the responsibility for educating physically handicapped children on the school boards of the province. Separate and distinct facilities are not used for disabled children.

> It is desirable for physically handicapped children, according to the Industrial Arts Program Handbook (1980) of the Department of Education, to participate in an industrial arts program which is aimed and developed with the total educational needs of the child in mind, rather than concentrating on a specific handicap. Furthermore, the overall aims and goals of the program should remain the same as for all students, but those involving the development of self-confidence, problem solving ability, and specific technical and manipulative skills may require special emphasis for some students. (p. 3)

Ontario

1. Bloorview Children's Hospital
   25 Buchan Court
   Willowdale, Ontario M2J 4S9

Executive Director: Dr. N. McKeown

Principal: Mr. G. Mercer

School established: 1898 (relocated 1975)

Academic program established: 1898

Industrial education program established: Unsure

Funding agency: Government of Ontario

Governing agency: Government of Ontario

Program: An educational program ranging from pre-school to high school grade levels is provided. The hospital provides for long term care in a residential setting. Because of changing priorities industrial education was discontinued in 1978.

2. Ontario Crippled Children's Centre
350 Rumsey Road
Toronto, Ontario M4G 1R8

Director, Educational Planning: Mr. M. E. Izzard

School established: 1962

Academic program established: 1962

Industrial education program offered: none

Funding agency: Government of Ontario

Governing agency: Government of Ontario

Program: This Centre admits patients for short-term medical treatment. Besides the academic program minimal pre-vocational education is also offered to handicapped learners, who range in age from pre-school to nineteen years of age.

3. Ottawa Crippled Children's Treatment Centre
P.O. Box 8469
395 Smyth Road
Ottawa, Ontario K1G 3H9

Principal: Mrs. E. Murphy

School established: 1951

Academic program established: Unsure

Industrial education program offered: none

Funding agency: Government of Ontario

Governing agency: Government of Ontario

Program: Young children are given intensive medical and therapeutic treatment and attend school on a day patient basis. In the Ottawa area students with multiple physical handicaps are placed into "Mainstream Units" in regular schools and take part in regular classes under the auspices of a support system called service management. Teacher aides are provided to give the teacher extra support. The exact nature of the student's program is worked out between the industrial education teacher and the special education teachers attached to the mainstream units. (Personal communication, December, 1981)

4. Thames Valley Children's Centre
   385 Hill Street
   London, Ontario N6B 1E4

Executive Director: Mr. M. R. Lysecki

Teacher-in-charge: Mr. D. M. Walmsley

School established: 1959

Academic program established: unsure

Industrial education program established: none

Funding agency: Government of Ontario/Private sector

Governing agency: Independent

Program: Educational services are provided for children from nursery to primary school age. "As soon as children can handle a wheelchair, crutches, pencil, or a communication aid, they are placed in a regular school system."

Ontario legislation: It would seem that Ontario is the only province in Canada with special legislation specifically enacted for the education of exceptional pupils. This legislation is known as The Education Amendment Act, 1980 and is An Act to amend The Educational Act, 1974. It is also referred to as Bill 82.

Primarily this Act makes for uniformity of approach to the education of exceptional pupils by the school boards in Ontario. This was accomplished by legislating consistency in terminology and definitions, assessment and examination procedures, enrollment and exclusion requirements, over-age students, cost arrangements and many other items. Through this standardization parents and guardians of exceptional children in Ontario now have the right to a process to properly place their child while school jurisdictions must now follow guidelines as laid down by law.

The scope of Bill 82 includes the phasing-in of special education programs in Ontario in an orderly fashion so that province-wide programs and services will be in place by September, 1985. It also clarifies the power to make regulations in respect of special education identification, placement and review committees of boards. Regulations governing the payment of costs of education for pupils from special facilities, homes and institutions is also included. Regarding the child, the Act states for example that blindness, deafness, or mental handicap is not of itself a cause for being excused from attendance at school.

An example of more specific legislation dealing with school attendance, a suitable instructional program, and the placement process at the elementary level is dealt with in Section 34 of the Act, which now reads:

> 34. - (1) A person is not qualified to be a resident pupil in respect of an elementary school if he is unable by reason of mental or physical handicaps to profit by instruction in an elementary school.

> (2) The inability of a pupil to profit by instruction in an elementary school because of a mental or physical handicap shall be determined by a committee established by the board in accordance with this section.

Part 2 above refers to a committee while part 3, which follows, describes the make-up of this committee:

> the Board shall appoint a committee of three persons consisting of a supervisory officer and a principal, neither of whom is the supervisory officer or principal to whom the matter has been previously referred, and,
> (a) a legally qualified medical practitioner where the pupil allegedly has a physical handicap.

Furthermore, the duties of this committee are referred to in part 4, which states in part that the committee shall determine whether the pupil can profit by instruction and make a written report to the board of its determination (Based upon The Education Act of Ontario, Ontario Legislative Assembly Papers, 4th session, Part I, 1980).

Prince Edward Island

There are no special schools for physically disabled students per se in Prince Edward Island. With new schools accessible these students are fully integrated. One setting is in a junior high school where these students are in a non-graded academic program but integrated into Industrial Arts classes:

Stonepark Junior High School
Charlottetown, P.E.I.
Mr. Tom Corcoran

At the rehabilitation centre an academic program is provided for older students:

Rehabilitation Centre
McGill Avenue
Charlottetown, P.E.I.

Saskatchewan

1. Children's Rehabilitation Centre
2420 Thayer Avenue
Saskatoon, Saskatchewan S7L 6B4

Manager, Children's Rehabilitation Centre: Ms. M. Trembley

School established: 1950 (Relocated: 1967)

Academic program established: 1950

Industrial education program established: none

Funding: Government of Saskatchewan

Governing: Government of Saskatchewan

Program: An academic education program is provided for children of all ages on a day patient basis. Children attend because they have need for intensive therapy but as soon as physical conditions permit the child is returned to his home school. Contact is maintained with out patients through clinics and outreach units.

2. Wascana Hospital School
23 Avenue and Avenue G
Regina, Saskatchewan S4S 0A5

Principal: Mrs. D. Nelson

Program: An academic program on a very limited basis is provided. No other data was communicated to the researcher.

Saskatchewan legislation: Saskatchewan Education in a pamphlet entitled "Special Education - An Overview" states:

> Public education is provided under Saskatchewan law to all children, regardless of disability. The Education Act guarantees the handicapped the right to appropriate educational services. Since 1971, when mandatory legislation was enacted, special education programs have enjoyed a rapid and varied growth. (pages not numbered)

The pamphlet goes on to say that the basic objectives of all special education programs are:

1. that they meet a handicapped student's individual needs;
2. that they include such non-academic "enrichment" areas as sports and recreation, culture and the arts;
3. that they be provided at no cost to the child's parents; and
4. that they give early consideration to vocational opportunities. (pages not numbered)

Saskatchewan's Education Act guarantees the following rights to handicapped children:

1. school boards must provide educational services appropriate to each child's needs;
2. teachers of severely handicapped children must have special qualifications;
3. parents of handicapped child can appeal his or her placement, in an appropriate program;
4. certain handicapped children may be enrolled in a provincially funded program as early as 3; and
5. a disabled person may remain in school until age 21. (Saskatchewan Education, Special Education - An Overview, Regina: Special Education Branch, not dated)

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APPENDIX A

THE APPENDIX CONTAINS COPIES OF CORRESPONDENCE THAT WERE RELATED TO THE IDENTIFICATION OF THE POPULATION OF THE STUDY

CONTENTS

Letter Requesting List of School Hospitals and Special Schools for Physically Handicapped Children in Canada from the Editor of Special Education in Canada

Copies of Letters Written to Directors of Special Education in the Provinces and Territories of Canada in English and French

Follow-up Letter to Identified Third Parties

Correspondence with Quebec Participants: English Letter and French Translation; English Questionnaire and French Translation

Letter Requesting Information About Schools in Ontario

GLENROSE HOSPITAL

10230-111 AVENUE
EDMONTON, ALBERTA
474-5451 T5G 0B7

Dr. Shirley Inrig
Co-editor, Special Education in Canada
c/o Simcoe County Board of Education
251 Patterson Rd.
Barrie, Ontario

Dear Dr. Inrig:

At the present time I am an Industrial Arts teacher at the Glenrose School Hospital in Edmonton, where I work with physically handicapped children. I am also enrolled in the Faculty of Graduate Studies and Research at the University of Alberta where I am completing the requirements for a Master of Education degree in Industrial Arts. Part of these requirements include the completion of a formal thesis.

The title of my thesis is "A Descriptive Analysis of Vocational, Pre-Vocational, Industrial Education, Industrial Arts Programs in Treatment Centres for the Physically Disabled in Canada". Part of the research design for this study precludes that all treatment centres and schools in Canada involved in educating physically handicapped children be contacted.

The purpose of this correspondence is to request your cooperation in the research by providing me with a list of the names and addresses of all treatment centres and special schools in Canada and the directors/principals of these schools which provide an education to physically disabled children. If this is not possible, may I request that you provide me with the name of a person who I might contact in order for me to secure information.

All data collected will be treated as priviliged information.

May I express my appreciation for your anticipated assistance in the early return of this information.

Sincerely,

Jake De Leeuw

J. De Leeuw
Teacher, Industrial Education

GLENROSE HOSPITAL

10230-111 AVENUE
EDMONTON, ALBERTA
474-5451 T5G 0B7

LETTER SENT TO PROVINCIAL DIRECTORS OF SPECIAL EDUCATION (EXCEPT QUEBEC)

At the present time I am an Industrial Arts teacher at the Glenrose School Hospital in Edmonton, where I work with physically handicapped children. I am also enrolled in the Faculty of Graduate Studies and Research at the University of Alberta where I am completing the requirements for a Master of Education degree in Industrial Arts. Part of these requirements include the completion of a formal thesis.

The title of my thesis is "A Descriptive Analysis of Vocational, Pre-Vocational, Industrial Education, Industrial Arts Programs in Treatment Centres for the Physically Disabled in Canada". Part of the research design for this study precludes that all treatment centres and schools in Canada involved in educating physically handicapped children be contacted.

The purpose of this correspondence is to request your cooperation in the research by providing me with a list of the names and addresses of all treatment centres and special schools in your province and the directors/principals of these schools which provide an education to physically disabled children. If this is not possible, may I request that you provide me with the name of a person who I might contact in order for me to secure information.

All data collected will be treated as privileged information.

May I express my appreciation for your anticipated assistance in the early return of this information.

Sincerely,

J. De Leeuw
Teacher, Industrial Education

GLENROSE HOSPITAL

10230-111 AVENUE
EDMONTON, ALBERTA
474-5451 T5G 0B7

October 1, 1981

M. Robert Trempe
Secrétaire général du Ministère d' Éducation
Edifice G
1035, rue de Lachevrotiere
Québec, Québec, G1R 5A5

Cher M. Trempe,

Je suis professeur des arts industriels à l'école "Glenrose School Hospital" à Edmonton, C'est une école pour les enfants handicapés. En même tempo, je fais des recherches pour gagner un diplôme supérieur en éducation dans le domaine des arts industriels.

Le sujet de ma thèse est: "L'Analyse descriptive des programs éducatifs professionels, industriels, des arts industriels où préparatoire, offerts par les centres de trailement pour les handicapés au Canada."

Je m'adresse à vous pour vous demander de m'assister dans mes recherches en me fournessant une liste des noms et des adresses et des noms des directeurs des centres de traitement et des écoles spéciales pour les handicapés dans la provence de Québec. Si vous n'avez pas cette information, pourriez vous me mettre en contact avec quelqu'an qui l'a.

Tous les données seront trailées confidentiellement.

Je vous remerci en avance pour votre assistance.

Avec mes sentiments les plus sincères,
Votre

J. De Leeuw
Teacher, Industrial Education

GLENROSE HOSPITAL

10230-111 AVENUE
EDMONTON, ALBERTA
474-5451 T5G 0B7

November 9, 1981

Mr. Michael Campbell
Coordinator of Special Education
School District 20
384 Lancaster Ave.
Sant John, N. B.

Dear Mr. Campbell:

At the present time I am an Industrial Arts teacher at the Glenrose School Hospital in Edmonton, where I work with physically handicapped children. I am also enrolled in the Faculty of Graduate Studies and Research at the University of Alberta where I am completing the requirements for a Master of Education degree in Industrial Arts. Part of these requirements include the completion of a formal thesis.

The title of my thesis is "A Descriptive Analysis of Vocational, Pre-Vocational, Industrial Education, Industrial Arts Programs in Treatment Centres for the Physically Disabled in Canada". Part of the research design for this study precludes that all treatment centres and schools in Canada involved in educating physically handicapped children be contacted.

Recently (October, 1981) I was in contact with Ms. Elizabeth Owens, Director of Special Education Services Branch, Department of Education, New Brunswick, who recommended that I get in touch with you about the education of multiple physically handicapped children in your system. Thus the purpose of this correspondence is to request your cooperation in the research by providing me with the name(s) of principals/directors of special schools or school hospitals in your jurisdiction where physically handicapped children receive their education. May I have this information no later than November 30, 1981, please.

All data collected will be used for research purposes only.

Please accept my sincere appreciation for your anticipated assistance in this project.

Sincerely,

J. De Leeuw

GLENROSE HOSPITAL

10230-111 AVENUE
EDMONTON, ALBERTA
474-5451 T5G 0B7

COVERING LETTER SENT WITH QUESTIONNAIRE TO TEACHERS IN QUEBEC

Je suis professeur des arts industriels à l'école "Glenrose School Hospital" à Edmonton. C'est une école pour les enfants handicapés. En même temps, je fais des recherches pour gagner un diplôme supérieur en éducation dans le domaine des arts industriels.

Le sujet de ma thèse est: "L'Analyse descriptive des programs éducatifs professionels, industriels, des arts industriels où préparatoire, offerts par les centres de traitement pour les handicapés au Canada."

Récemment (Octobre, 1981) j'ai correspondu avec M. Robert Trempe, le sécrétaire du Ministre de l'Éducation, P. Q., que a identifié des écoles et des institutions dispensant l'enseignement à l'enfance en difficulté d'adaptation et d'apprentissage en Québec. Il a suggéré que je fais contact avec vous pour déterminer des handicaps principals et le programme d'éducation dans votre institution.

Je vous prie, s'il vous plaît, de completer le questionnaire ci-jointe, et le retourner à moi par le 30 novembre, 1981.

Tous le donneés rassembleés seront utiliser seulement pour la recherche.

S'il vous plait, accepter mon appréciation sincère pour votre assistance dans ce projet.

Avec mes sentiments lès plus sincères,
Votre,

J. De Leeuw
Teacher, Industrial Education

QUESTIONNAIRE

Contact Person: ____________________

Position: ____________________

Name of the School: ____________________

Address: ____________________

This school provides special education instruction at the:

elementary level ☐

secondary level ☐

other, please describe ____________________

____

The educational program consists of:

academic courses ☐

living skill development courses ☐

vocational training courses ☐

Do you offer instruction in industrial arts? ____________________

Are the majority of your students physically handicapped?

____

Other comments:

QUESTIONNAIRE

Correspondant: ______________________________

Position: ______________________________

Nom de l'école/institution: ______________________________

Adresse: ______________________________

Cet école donne de l'instruction à l'enfance en difficulté d'adaptation et d'apprentissage au niveaux suivants:

élémentaire ☐

secondaire ☐

autre: décrivez, s.v.p. ______________________________

____

Le programme d'éducation consiste:

- des cours académiques ☐
- d'instruction dans des habiletés de la vie ☐
- d'instruction professionel ☐

Offrez-vous de l'instruction dans des arts appliqués/des arts industriels?

____

La plupart de vos étudiants, sont-ils handicapes physiquement?

____

Autres commentaires:

EDUCATION DEPARTMENT
GLENROSE SCHOOL HOSPITAL
10230 - 111TH AVENUE
EDMONTON, — ALBERTA

GLENROSE HOSPITAL

10230-111 AVENUE
EDMONTON, ALBERTA
474-5451 T5G 0B7

ENGLISH TRANSLATION OF FOLLOW-UP LETTER SENT TO QUEBEC TEACHERS

May I draw your attention to my letter of November 18, 1981, requesting that you complete a questionnaire on the educational program that is offered at your school for the physically handicapped learner.

No doubt, during this time of the year your schedule has been very busy. Educators who teach physically handicapped children and who are aware of this study feel that it should be of interest to those who teach educational programs to physically handicapped students.

I have enclosed another copy of the questionnaire in case you have misplaced the previous one that was sent for you to complete. Please answer the questions and return in the self-addressed envelope by February 6, 1982.

I sincerely hope that you will assist me in this study by mailing back the questionnaire at your earliest convenience.

Sincerely,

Mr. Jake De Leeuw
Industrial Education

GLENROSE HOSPITAL

10230-111 AVENUE
EDMONTON, ALBERTA
474-5451 T5G 0B7

FOLLOW-UP LETTER SENT TO TEACHERS IN QUEBEC

Je me permets de vous rappeler, que je vous ai ecrit le 18 Novembre, 1981 pour vous demander de remplir en questionnaire sur le program éducatif, que votre ecole offre aux étudiants physiquement handicapés.

Te comprends bien, que vous devez être bien occupés à ce temps là, mais je suis certain, que mon enquête vous sera utile comme à tous, qui euseignent les étudiants physiquement handicapés.

Ici inclus une seconde copie du questionnaire en cas, que vous aviez perdu le premier.

Je serrais très reconnaissant, si vous pourriez le remplir et retourner dès le 6 fevrier, 1982.

En vous remerciant en avance pour votre assistance, je reste

respectueusement,

M. Jake De Leeuw

GLENROSE HOSPITAL

10230-111 AVENUE
EDMONTON, ALBERTA
474-5451 T5G 0B7

Mr. Murray Wall
Niagara Peninsula Crippled Children's Centre
P.O. Box 1181
567 Glenridge Ave.
St. Catherines, Ontario, L2R 7A7

Dear Mr. Wall:

In follow up to the conversation you had with my brother Martien, of Carleton University, I want to express my thanks for information you provided on various treatment centres for the multiple physically handicapped in Ontario. At that time you requested information on the Glenrose School Hospital and I have enclosed a brochure for that purpose. Should you desire more information please do not hesitate to contact me.

At the present time I am an Industrial Arts teacher at the Glenrose School Hospital in Edmonton, where physically handicapped children receive their education. In addition to my teaching responsibilities I am also enrolled as a graduate student in the Faculty of Graduate Studies and Research of the University of Alberta where I am completing the requirements for a Master of Education degree in Industrial Arts. Part of the requirements for that degree include the completion of a formal thesis.

The title that I have selected for my thesis is "A Descriptive Analysis of Vocational, Pre-Vocational and Industrial Arts Programs in Special Schools for the Physically Handicapped in Canada". Part of the research design for this study involves all of the teachers who teach in the above mentioned areas in special schools across Canada to complete the research instrument.

I have enclosed a sample instrument for your perusal and I would appreciate your comments on any aspect of the questionnaire. I understand that the Niagara Peninsula Crippled Childrens Centre and the other Centres named on the attached sheet deal primarily with kindergarten and elementary age students and that older students are integrated - thus no industrial education courses are provided in these centres. With this in mind would it be possible for you to send me a copy of Bill 82 and any other pertinent legislation in Ontario with respect to the multiple physically handicapped and their educational opportunities.

Thank you for you interest and my sincere appreciation for your anticipated assistance.

Sincerely,

Jake De Leeuw

J. De Leeuw

APPENDIX B

CONTAINED IN THIS APPENDIX ARE A COPY OF THE RESEARCH INSTRUMENT AND COPIES OF ASSOCIATED CORRESPONDENCE THAT WAS RELATED TO THE RESEARCH

CONTENTS

Letter of Introduction to Principals

Copy of Information Sheets

Letter to Participating Teachers

Copy of Research Instrument Used for Data Collection

Copy of Follow-up Letter

GLENROSE HOSPITAL

10230-111 AVENUE
EDMONTON, ALBERTA
474-5451 T5G 0B7

LETTER OF INTRODUCTION SENT TO PRINCIPALS

At the present time I am an Industrial Arts teacher at the Glenrose School Hospital in Edmonton, where I work with physically handicapped children. I am also enrolled in the Faculty of Graduate Studies and Research at the University of Alberta where I am completing the requirements for a Master of Education degree in Industrial Arts. Part of these requirements include the completion of a formal thesis.

The title of my thesis is "A Descriptive Analysis of Vocational, Pre-Vocational, Industrial Education, Industrial Arts Programs in Treatment Centres for the Physically Disabled in Canada". Part of the research design for this study precludes that all treatment centres and schools in Canada involved in educating physically handicapped children be contacted.

The purpose of this correspondence is to request your cooperation in the research by permitting your teachers in the above mentioned areas to be included in the study. The teachers will be requested to complete a questionnaire and return it to the researcher. Enclosed please find two questionnaires, which I trust, will be sufficient for the teachers on your staff. If you have no objection to your teachers completing this questionnaire, please distribute them.

All data collected will be used for research purposes only.

Please accept my sincere appreciation for your anticipated assistance in the completion and early return of the research instrument by the above date.

Sincerely,

J. De Leeuw

Information Sheet on Definitions

The following definitions have been accepted for this study. These are presented because they are subject to various interpretations and to help establish a point of reference for the participants of the study.

1. Physically handicapped

   - a group of exceptionalities - the orthopedic, the sensorily handicapped, the physically delicate, the brain-injured, the epileptic, and the like, The brain-injured will include the cerebral palsied and those who have, or are believed to have, higher level neural impairments not reflected in motor dysfunction (Newland, 1971, p.116).

2. Multiply handicapped

   -those handicapped persons who are usually very severely disadvantaged in their communications by comparison to all other persons, including those who have only a single, though severe, physical handicap (Canada Health and Welfare, 1980, p.85).

3. Industrial education

   - a program consisting of courses which provide a continuum of experiences, starting with exploratory activities in junior high school and expanding in the high school to the development of skills related to career fields (Alberta Education, 1978, p.83).

4. Industrial arts

   -is that part of the educational program which concerns itself largely with preparing individuals to live in a technological culture. (This is traditionally achieved through a study of industry by providing first-hand manufacturing and service-type experiences in the use of tools, materials and processes (Moon, 1975, p. 15).

5. Pre-vocational education

   -is for those students who have trouble coping with the regular program. The program consists of a blending of academic, exploratory, and vocationally oriented courses with emphasis on remediation, practical application, and vocational skills (Edmonton Public School Board, undated, p. 1).

6. Vocational education

   -is an educational program organized to prepare the learner for entrance into a chosen vocation (Thompson, 1973, p. 8).

INFORMATION SHEET

Industrial Education at the Glenrose School Hospital

The industrial education program at the Glenrose School Hospital consists of industrial arts at the junior high level and industrial education at the senior high school level. The laboratory (shop) is fully accessible, many of the machine tools can be raised or lowered, and a number of machine tools have been modified.

This one-teacher facility has eleven areas through which students can rotate. These areas are woods, ceramics, metals, plastics, drafting, graphics, photography, electronics/electricity/computers, and power. Although the provincial curriculum guide is used many deviations are made to individualize the handicapped's learning.

The multiple activity laboratory is also used to teach elementary industrial arts to children from Readiness to grade 4. These students spend one hour per week for five to nine weeks in hands-on types of work. Materials with which these students work are found in woods, ceramics, plastics, graphics and photography. A modified industrial arts program is offered to students in grade five and six.

GLENROSE HOSPITAL

10230-111 AVENUE
EDMONTON, ALBERTA
474-5451 T5G 0B7

November 18, 1981

Dear Fellow Teacher:

At the Present time I am an Industrial Arts teacher at the Glenrose School Hospital in Edmonton, where physically handicapped children receive their education. In addition to my teaching responsibilities I am also enrolled as a graduate student in the Faculty of Graduate Studies and Research of the University of Alberta where I am completing the requirements for a Master of Education degree in Industrial Arts. Part of the requirements for that degree include the completion of a formal thesis.

The title that I have selected for my thesis is "A Descriptive Analysis of Vocational, Pre-Vocational and Industrial Arts Programs in Special Schools for the Physically Handicapped in Canada". Part of the research design for this study involves all of the teachers who teach in the above mentioned areas in schools across Canada.

Enclosed is a copy of the research instrument which I would like for you to complete. It should take approximately one half hour. Also included is a sheet which defines terminology used in the instrument. Since I am working with a very limited number of teachers, I am depending on a high rate of return. I would be most grateful if you would offer your cooperation and complete the enclosed questionnaire and return it to me in the enclosed self addressed envelope before December 12, 1981.

All data collected will be treated as privileged information.

Thank you for your assistance and once the study is complete a copy of the abstract will be made available to those who participate in the research.

Sincerely,

Jacob De Leeuw

SURVEY OF INDUSTRIAL ARTS, VOCATIONAL AND PRE-VOCATIONAL PROGRAMS OF SCHOOLS FOR PHYSICALLY HANDICAPPED STUDENTS

Date: ____________________

Participant's Name (optional): ____________________

Title or Position: ____________________

Name of School: ____________________

Province: ____________________

SCHOOL BACKGROUND INFORMATION

1. Name of Superintendent or Director: ____________________

2. Types of Instructional Programs offered (Check appropriate box(es):

   Academic Education ☐

   Vocational Education ☐

   Pre-Vocational Education ☐

   Industrial Education ☐

   Other ☐

   If there are other programs which do not fit the above classifications, please list these below:

   ____

   ____

3. Give the date when each instructional program was first offered:

	Date
Academic Education	________
Vocational Education	________
Pre-Vocational Education	________
Industrial Arts Education	________
Home Ec. Education	________
Others ________	________
________	________

If vocational, pre-vocational, industrial arts are not part of your program, please explain:

____

____

____

INDUSTRIAL EDUCATION

4. How is your program funded? (Check most applicable):

Provincial Funds ☐
Federal Funds ☐
Municipal Funds ☐
Private Funds ☐
Service Club Funds ☐
Other Funds (Specify) ☐

____

5. How is your program governed? (Check most applicable):

Provincially ☐
Federally ☐
Municipally ☐
Privately ☐
Service Club ☐
Other ☐

____

6. In your opinion, is your program adequately funded? Yes __________

No __________

Please explain more fully: ______________________________

____

____

____

7. Number of instructors in your area employed to teach:

Vocational Education ____________________

Pre-Vocational Education ____________________

Industrial Arts ____________________

Other ____________________

Specify: ____________ ____________________

8. Please check the program of studies that you teach:

Academic Education ☐

Vocational Education ☐

Pre-Vocational Education ☐

Industrial Arts ☐

Other ☐

Specify: ____________________________________

____

9. Please list the subjects that you teach and the enrollment in each subject according to age and sex:

Course Taught	Total Enrollment	Number of Male	*Age group(s)	Number of Female	*Age Group(s)
eg. Woodworking	85	56	2, 3	29	3

*Please use the appropriate number to identify the age groups that you teach:

0	7 - 9
1	10 - 12
2	13 - 15
3	16 - 18
4	19 - 21
5	22 - up

10. Percentage of your time spent teaching:

Academic Education ____________ %

Vocational Education ____________ %

Pre-Vocational Education ____________ %

Industrial Arts Education ____________ %

Other (Specify) ____________ %

INSTRUCTOR BACKGROUND INFORMATION

(Answer only the questions that pertain to yourself.)

11. Identify the type of institution of higher learning where you acquired the skills to teach your program. Please check appropriate box(es).

University ☐

Community College ☐

Teachers College ☐

Technical Institute ☐

Trade School ☐

Trade College ☐

Industry ☐

- at apprenticeship level ☐

- at Master's level ☐

No formal training ☐

Other (Please specify) ☐

____

12. Please state degree(s), diploma(s), or certificate(s) attained and the field of study:

Degree, Diploma, Certificates	Field of Study

SPECIAL EDUCATION

13. As a teacher of physically handicapped students were you required to take any courses in special education (University level) in order to teach:

Yes ☐

No ☐

If yes, please give the minimum number of courses that were required:

____

14. Please check the appropriate box to indicate the number of courses you have taken directed at teaching the physically handicapped:

1 - 3 ☐

4 - 6 ☐

7 - 9 ☐

10 - 12 ☐

13 - more ☐

none ☐

15. Please rank in order of frequency the following disabilities as these pertain to your school:

Cerebral Palsy ☐

Muscular Dystrophy ☐

Developmental Lags ☐

Postoperative ☐

Other ☐

16. Please rank in order of frequency the other disabilities found among your physically handicapped student:

Hard of hearing ☐
Mentally retarded ☐
Non-reader ☐
Aphasic ☐
Sensory handicaps ☐
Others ☐
Please list ______________________________
____

17. Please rank in order of usage the means of communication that you use while teaching:

Oral Communication ☐
Voice Recorder ☐
Bliss Symbols ☐
Spelling Boards ☐
Blackboard ☐
Overhead ☐
Films, Filmstrips, etc. ☐
Written notes ☐
Other (Specify) ☐
____

18. How much time per week does the learner spend in industrial education:

Senior high __________ minutes
Junior high __________ minutes
Elementary __________ minutes

PROGRAM OBJECTIVES

19. Please identify the objectives for your program by numbering the appropriate box(es) in order of priority. (Start with #1 as highest priority).

Skill development ☐
Personal development ☐
Social development ☐
Saleable skills ☐
Work habits ☐
Work attitudes ☐
Other (Specify) ☐

____

____

____

EQUIPMENT

20. Students in industrial education courses work with:

a) handtools only ☐
b) machine tools when properly qualified ☐
c) all hand tools and machine tools that they are capable of safely operating. ☐

How do students qualify to operate electric equipment as in b) and c) above:

____

____

21. Do you feel that equipment should be modified/adapted so that physically handicapped students can operate it?

Yes ☐
No ☐

Give a reason for your answer: ______________________________

____

____

____

22. Equipment in your shop (laboratory) is used:

a) as it was originally supplied ☐

b) with modifications ☐

c) in combination with adaptive equipment (splints, etc.) ☐

23. If your equipment is modified, who made these modifications:

a) you, or another instructor ☐

b) a person specifically hired for this ☐

c) an occupational therapist, etc. ☐

d) other, please explain ☐

____

____

24. Please list the percentage of your time overall that is spent teaching theory____________ and practical ______________.

CURRICULUM

25. Have curriculum guides been developed for use in your program:

Yes ☐

No ☐

Are you required to use these curriculum guides:

Yes ☐

No ☐

If yes, where did these curriculum guides originate:

____

____

26. Were these curriculum guides developed in conjunction with the academic program in your school:

Yes ☐

No ☐

27. Does the academic teacher work on related subject matter pertaining to the course you teach:

Yes ☐

No ☐

28. Do you believe that there is adequate communication between the academic department and your department:

Yes ☐

No ☐

29. Is there a career education program offered to the students at your school:

Yes ☐

No ☐

30. What changes would you like to see made to make your program more effective: (Describe as briefly as possible).

____

____

____

____

____

____

31. Please comment how you feel about providing industrial education programs to physically handicapped students:

32. Do you feel that industrial education courses are effective and useful for physically handicapped students:

Yes ☐

No ☐

Please explain:

33. Has there been a change in the type of student you teach due to:

	Yes	No
Declining enrollment	☐	☐
Mainstreaming	☐	☐
Earlier identification of handicaps	☐	☐
Other	☐	☐

Please elaborate

34. Briefly describe any changes in your program which have been necessitated by the previous question:

35. Are there any other non-teaching personnel (e.g. recreational therapist, occupational therapist, etc.) involved in making your students aware of the world of work:

Yes ☐

No ☐

If "yes", please identify the staff who have such responsibility and describe how they are involved in making the student aware of the world of work:

____

____

____

____

36. Please use this space for comments or elaboration on any aspect of your program that may have been overlooked on this questionnaire.

____

____

____

____

Researcher's Note:

I appreciate you having taken the time to complete this instrument. Please return your completed questionnaire to the researcher in the self-addressed envelope that was provided for that purpose. Thank you for your cooperation.

APPENDIX C

APPENDIX C CONTAINS PIECES OF ALBERTA LEGISLATION WHICH WERE RELATED TO THE STUDY

CONTENTS

Copy of Terms of Reference: Cameron Commission on Education

Order-in-Council 655/64: Establishing the Physically Handicapped Children's Unit

ALBERTA ROYAL COMMISSION ON EDUCATION

TERMS OF REFERENCE

Order-in-Council 2009/57 establishing the Commission was ap- oved and ordered by the Honourable John J. Bowlen, Lieutenant vernor, on December 31, 1957, as follows:

The Executive Council has had under consideration the report of the Honour- e the Minister of Education, dated December 30th, 1957, stating that:

WHEREAS under the provisions of THE PUBLIC INQUIRIES ACT, being apter 258 of the Revised Statutes of Alberta, 1955, it is provided that where Lieutenant Governor in Council deems it expedient and in the public interest cause an inquiry to be made into and concerning a matter within the jurisdic- n of the Legislative Assembly and that he declares by his commission to be a tter of public concern, the Lieutenant Governor in Council may appoint one more Commissioners to make the inquiry and to report thereon; and

WHEREAS it is deemed expedient and in the public interest that a public uiry be made under the provisions of The Public Inquiries Act, being chapter 8 of the Revised Statutes of Alberta, 1955, by way of a comprehensive survey the various phases of the elementary and secondary school system of the ovince with particular attention to programs of study and pupil achievement; d

WHEREAS the Minister of Education has constituted an Advisory Committee nsisting of representatives of a number of Alberta organizations interested in lucation and has consulted with the said Advisory Committee with respect to e terms of reference of the inquiry as set forth herein; and

WHEREAS the said Advisory Committee is available for consultation from ne to time by the Commissioners nominated herein, at the request of the mmissioners; and

WHEREAS it is deemed expedient that a Commission issue to Honourable onald Cameron, House of Senate, Ottawa, as Chairman of the Commission, and ilma Hansen (Mrs. D. A. Hansen), 2915 Champlain Street, Calgary, and Ivy ylor (Mrs. W. C. Taylor), Wainwright, and John S. Cormack, 11007 - 99 Avenue, lmonton, and Norman W. Douglas, 3603 - 8A Street S.W., Calgary, and Gordon slie Mowat, 11622 - 77 Avenue, Edmonton, as Commissioners to conduct the id inquiry and that the said Commission do declare the aforesaid matters to be atters of public concern.

THEREFORE, upon the recommendation of the Honourable the Minister of ducation, the Executive Council advises that a COMMISSION do issue appointing ONALD CAMERON, WILMA HANSEN, IVY TAYLOR, JOHN S. CORMACK, ORMAN W. DOUGLAS, AND GORDON LESLIE MOWAT, as Commissioners to nduct the said inquiry, the said Donald Cameron to be Chairman of the Com- ssioners, and that they be authorized and directed to study and consider the llowing matters:

The Commissioners shall study and consider the aims and objectives essential to maintain a proper and adequate educational program for pupils of the elementary and secondary schools of the Province;

The Commissioners, having regard to their findings relative to A, above, shall inquire into the various aspects of elementary and secondary education as they relate to the schools of Alberta; and to the extent that they deem it feasible the Commissioners shall during the course of their inquiry and without restricting their consideration of any aspects, have special regard to the following list of subjects:

1) The curricular programs of the several school levels.
   (a) The suitability and adequacy of the subjects offered;
   (b) The efficiency of teaching and pedagogical procedures;
   (c) The adequacy of the organization, administration and supervision of instruction;

ORIGIN AND OPERATION OF THE COMMISSION

  (d) The adequacy and availability of school textbooks and of school library services;
  (e) The feasibility and desirability of interprovincial standardization of courses and textbooks;
  (f) Aids to teaching, with special attention to films, radio and television.

(2) The attainment of school pupils and the procedures governing their classification and promotion.
  (a) The age of entrance into Grade I;
  (b) The acceleration and retardation of pupils;
  (c) The establishment of achievement norms;
  (d) The retention of pupils in school;
  (e) Departmental examinations and the extent to which these should be modified, restricted or extended;
  (f) The requirements for high school graduation, for university entrance, and for entrance into other educational institutions and training schools, including technical schools.

(3) The extent to which various special services are desirable and necessary, and the nature of those services which should be adopted as integral parts of the educational system of the Province.
  (a) Guiding and counselling;
  (b) The requirements of gifted pupils;
  (c) The requirements of handicapped pupils;
  (d) Health services;
  (e) Financial aid for high school students.

(4) Types of school organization.
  (a) Centralized schools;
  (b) Composite high schools;
  (c) The small high school in which the ratio of teachers to grades is less than one;
  (d) High school education as related to Junior Colleges;
  (e) Technical, vocational and agricultural training in high schools;
  (f) The divided school year or semester system at the high school level.

(5) Physical facilities.
  (a) The adequacy and suitability of existing facilities;
  (b) The utilization of school plant and equipment.

(6) The quality and supply of teachers.
  (a) Entrance requirements;
  (b) Facilities and programs for teacher education;
  (c) Certificates and certification requirements;
  (d) In-service education;
  (e) Factors relating to the recruitment and supply of teachers;
  (f) The distribution of teachers between urban and rural schools;
  (g) Financial aid to teachers in training.

(7) The relationship of the educational system to the requirements of industry and the modern community.
  (a) The growing demand for trained personnel and the provisions necessary to adequately meet that need;
  (b) The impact of industrial employment opportunities on high school and university attendance;
  (c) The impact of community attitudes on education;
  (d) The nature of the instruction required for technical vocational training;
  (e) Instruction in agriculture.

(8) The economics of education insofar as finance is a factor in respect to an appraisal of the matters enumerated above and other related subjects but exclusive of any detailed study of sources of funds for school purposes or procedures whereby such funds are obtained and distributed.

and to report thereon to the Lieutenant Governor in Council and to make such recommendations to the Lieutenant Governor in Council as the said Commissioners may in their discretion consider proper and advisable;

AND FURTHER that the said Commission do declare the said matters to be matters of public concern.

AND FURTHER that the said Commission do confer upon Donald Cameron, Wilma Hansen, Ivy Taylor, John S. Cormack, Norman W. Douglas, and Gordon Leslie Mowat, the power of summoning witnesses before them and to require such witnesses

(a) to give evidence on oath, orally or in writing, or on solemn affirmation (if they are persons entitled to affirm in civil matters) and

(b) to produce such documents and things as the said Commissioners may deem requisite to the full investigation of the matters into which they are appointed to inquire,

and further conferring upon the said Commissioners the same power to enforce the attendance of witnesses and to compel them to give evidence as is vested in any court of record in civil cases.

AND FURTHER that the Commissioners may, with the prior approval and consent of the Lieutenant Governor in Council, secure consultant services, other than the Advisory Committee hereinbefore mentioned, where necessary or desirable in any phase or phases of their inquiry in either an advisory capacity or for the purpose of separate analyses to form appendices to the report of the Commission.

(Signed) ERNEST C. MANNING

Chairman

O.C. 655/64

Approved and Ordered,

S. Bruce Smith

ADMINISTRATOR

Edmonton, Tuesday, April 28th, 1964.

The Executive Council has had under consideration the report of the Honourable the Minister of Health, dated April 3rd, 1964, stating that:

WHEREAS section 5 of The Treatment Services Act, being chapter 146 of the Revised Statutes of Alberta, 1955, as amended in 1963, allows the Lieutenant Governor in Council to establish treatment services for multiple handicapped people; and

WHEREAS the 1963 amendment deleted section 7 of the said Act which section dealt with the Cerebral Palsy Clinics; and

WHEREAS it is desired that a unit to treat multiple handicapped children be established; and

WHEREAS the function of the Edmonton Cerebral Palsy Clinic can be advantageously carried out within such a unit; and

WHEREAS the Glenrose Provincial General Hospital has the facilities for such a unit:

THEREFORE, upon the recommendation of the Honourable the Minister of Health, the Executive Council advises that Regulations Governing the Multiple Handicapped Children's Unit, Glenrose Provincial General Hospital, be and are hereby approved.

CHAIRMAN

MULTIPLE HANDICAPPED CHILDREN'S UNIT
GLENROSE PROVINCIAL GENERAL HOSPITAL

1. All children with a physical handicap, who, by reason of their disability, require educational facilities, who are not over the age of seventeen years, and whose I.Q. rating is 75 or above, may be treated in this unit.
2. The following classification of Handicapped Children will be used:
    1. Cerebral Palsy
    2. Poliomyelitis
    3. Juvenile paraplegia from birth, injury or trauma
    4. Juvenile amputees, either congenital or traumatic
    5. Orthopaedic handicapped, including Legge-Perthes and Osgood-Schlatters Disease, congenital hip dislocation, etc.
    6. Cleft palate and hare lip deformities following surgical treatment and referred for orthodontia, prosthodontia and speech therapy
    7. Congenital or acquired defects and diseases which are considered by the Advisory Committee as being able to benefit from treatment in this service, including muscular dystrophy and rheumatic fever.

3. Children must be referred by a doctor and may be admitted only after being examined by an admitting assessment team composed of:-
    1. Paediatrician
    2. Orthopaedic Surgeon
    3. Physiatrist
    4. Physiotherapist
    5. Occupational Therapist
    6. Speech Therapist
    7. Social Service Worker
    8. Psychologist
    9. Other professional consultants as may be required.
4. The team may (1) authorize admission, (2) advise as to treatment, aim, or goal.
5. Hospital co-insurance charges are the responsibility of parents or guardians.
6. Medical Treatment

   All medical services rendered within the Multiple Handicapped Children's Unit, as an in-patient, are provided at the expense of the Province of Alberta. Medical services required outside the unit facilities are the financial responsibility of the parents or guardians.
7. A staff physician, appointed by the Board of Management of the Glenrose Provincial General Hospital, will look after the medical needs of the in-patients of the Multiple Handicapped Children's Unit. Members of the Consultant Panel may be called by the Clinical Director or Staff physician for the purpose of consultation. They shall be paid on the basis of 90% of the Schedule of Fees of the College of Physicians & Surgeons of Alberta.

8. Dental Care

Basic dental needs may be provided for in-patient children approved for treatment. Dental care may be provided for out-patient children where a dental problem is a major part of their handicap.

9. Clinical Director

The Clinical Director of the Multiple Handicapped Children's Unit will be responsible, through the Executive Director of the Glenrose Provincial General Hospital, to the Board of Management (of the hospital) for the supervision of treatment services rendered in the unit and for maintaining a high standard of treatment. The Clinical Director is also Chairman of the admitting assessment team, and will supervise the assessment of applicants for admission.

10. Glenrose Provincial General Hospital Multiple Handicapped Children's Unit Cerebral Palsy Clinic (Edmonton)

(1) As of April 1, 1964, the Cerebral Palsy Clinic (Edmonton) will be renamed as above and will come under the administration of the Glenrose Provincial General Hospital.

(2) This Cerebral Palsy Clinic will continue its rehabilitation and education service to eligible patients suffering only from Cerebral Palsy.

(3) The staff of the Cerebral Palsy Clinic will continue to serve in their present capacities, and will transfer to the Glenrose Provincial General Hospital April 1, 1964, and will receive the benefits of the Glenrose Provincial General Hospital personnel policy,and abide by the terms of employment without prejudicing their present status, regarding pension, sick leave, holiday, etc., at time of transfer.

(4) The Director of the Cerebral Palsy Division will co-ordinate and supervise the activities of the Edmonton Clinic with the Department of Public Health.

11. Clinical Assessment and Accounts

The assessment of patients attending the Cerebral Palsy Clinic (Edmonton) will be performed by consultants under the same provision as below, effective May 1st, 1964.

Consultants working on the Assessment Panel at the Multiple Handicapped Children's Unit will be paid at the rate of $15.00 per patient per clinic day, with a maximum payment of $50.00 per clinic day and a minimum payment of $25.00 per clinic day.

12. Accounts from the staff physician, consultants and assessment panel members will be authorized by the Executive Director of the Glenrose Provincial General Hospital, and will be passed to the Director of Medical Services Division for approval and payment.

13. Clinical Director

The salary of the Clinical Director of the Multiple Handicapped Children's Unit is the responsibility of the Board of Management of the Glenrose Provincial General Hospitsl. The payment may be claimed back from the Department of Public Health through Medical Services Division.

APPENDIX D

A LISTING OF PARTICIPATING SPECIAL SCHOOLS
IN QUEBEC IS CONTAINED IN THIS APPENDIX

LISTE DES INSTITUTIONS SUBVENTIONNEES DISPENSANT L'ENSEIGNEMENT A L'ENFANCE EN DIFFICULTE D'ADAPTATION ET D'APPRENTISSAGE

1- CENTRE ACADEMIQUE FOURNIER INC.
4115 - 48e Rue
Montréal
H1Z 1L2

Tél: 321-0191

DIRECTRICE: Mme Marie-Claire Gravino

2- CENTRE D'INTEGRATION SCOLAIRE INC.
10 142 boulevard St-Laurent
Montréal 357
H3L 2N7

Tél: 384-7940

DIRECTRICE: Mme Louise Murray

3- CENTRE DE L'ENSEIGNEMENT VIVANT INC.
8833 boulevard St-Michel
Montréal
H1Z 3G3

Tél: 325-8500

DIRECTRICE: Mlle Marie-Josée Hamel

4- CENTRE FRANCOIS MICHELLE
10 095 rue Meunier
Montréal 367
H3L 2Z1

Tél: 381-4418

DIRECTRICE: Mme Gisèle Allie

5- CENTRE PSYCHOPEDAGOGIQUE DE QUEBEC INC.
2995 rue Curé Couture
Québec
G1N 4T7

Tél: 627-1142

DIRECTEUR: M. Jean-Marie Guay

6- CLINIQUE (LA) PEDAGOGIQUE DE MONTREAL
11 015 Tolhurst
Montréal
H3L 3A8

Tél: 334-2189

DIRECTEUR: M. Lucien Guilbeault

7- ECOLE MIRIAM
1750 Deguire
St-Laurent
H4L 1M7

Tél: 744-2867

DIRECTRICE: Mme Gloria Cherney

8- ECOLE PETER HALL INC.
Cours: 5915 ouest, boul. Henri-Bourassa
Ville St-Laurent
Montréal
H4R 1B7

Corr : 230 boul. Henri-Bourassa est
Chambre 101
Montréal
H3C 1B8

Tél: 381-7671

DIRECTEUR: M. Victor Elbert

9- ECOLE VANGUARD QUEBEC LTEE
6520 ouest, boul. Gouin
Montréal
H4K 1B2

Tél: 334-4405

DIRECTRICE: Mme Marlène Moran

10- MONTREAL ORAL SCHOOL FOR THE DEAF
5,000 Avenue Iona
Montréal 248
H3W 2A2

Tél: 739-0189

DIRECTRICE: Mme Doris J. Leckie

11- VAL MARIE
88, Chemin du Passage
Cap de la Madeleine
Champlain
G8T 2M3

Tél: 379-8040

DIRECTEUR: M. Pierre Caron

LISTE DES INSTITUTIONS SOUS PERMIS DISPENSANT L'ENSEIGNEMENT A L'ENFANCE EN DIFFICULTE D'ADAPTATION ET D'APPRENTISSAGE

1- CENTRE D'ETUDES POUR HANDICAPES PHYSIQUES
Cours: 434 Saint-Charles Borromée
Joliette
J6E 4R7

Corr: 390, Saint-Louis
Joliette
J6E 2Y6
(514) 756-8021

DIRECTRICE: Gertrude Cloutier

2- ECOLE THIBODEAU
221, rue Carillon
Sherbrooke
J1J 2Y3
(819) 562-8432

DIRECTRICE: Gabrielle P. Thibodeau

3- PREP SCHOOL
4240 Avenue Giraourd
Montréal
H4A 3C9
(514) 489-7287

DIRECTEUR: M.A. Brodsky

VITA

NAME: Jacob De Leeuw

PLACE OF BIRTH: Rotterdam, Holland

DATE OF BIRTH: 1939 06 03

POST SECONDARY EDUCATION:

University of Alberta, Edmonton, Alberta
Bachelor of Education in Industrial Arts
1964-1968

University of Alberta, Edmonton, Alberta
Diploma of the Faculty of Education in Educational Psychology
1975-1980

University of Alberta, Edmonton, Alberta
Master of Education in Industrial Arts
1975-1980

RELATED WORK EXPERIENCE

Edmonton Public School Board
Teacher, Glenrose School Hospital
Industrial Education, 1971 -

Edmonton Public School Board
Member: Industrial Arts Curriculum Committee
1969-1970

Alberta Education
Member: Electricity/Electronics Curriculum Ad Hoc Committee
1971-1972

ORGANIZATIONS

Member, Phi Delta Kappa, Honorary Fraternity of Professional Educators
Member, Alberta Teachers Association
Member, Special Education Council, A.T.A.
Member, Industrial Education Council, A.T.A.
  - Editor, 1976-1977
Member, Edmonton Regional Council for Industrial Educators
  - Treasurer, 1973-1974
  - President, 1974-1975

PUBLICATIONS:

Potpourri. The Communicator, 1975, Spring. Official Publication of the Industrial Education Council, A.T.A.

Up to their braces in clay. Teaching Atypical Students in Alberta (TASA), 1975, 5(1). Official Publication of the Special Education Council, A.T.A.

Developing a special interest activity program for physically handicapped students. Teaching Atypical Students in Alberta (TASA), 1982, 11(1). Official Publication of the Special Education Council, A.T.A.